WOOD

Combined with

WOOD PRODUCTS

July, 1951

N.P.A.'S BRUCE

WOOD SALUTES, a new feature on page 21, bows to C. A. Bruce, J. A. Hall, and Ray Carter

SAFETY and PROFITS

Kroehler found that safety pays profits. Here's how they do it . . . page 26.

A NEW NAME

This issue WOOD combined with WOOD PRODUCTS is inaugurated with the aim of providing the industry with the best in the field.

SEE THESE FEATURES

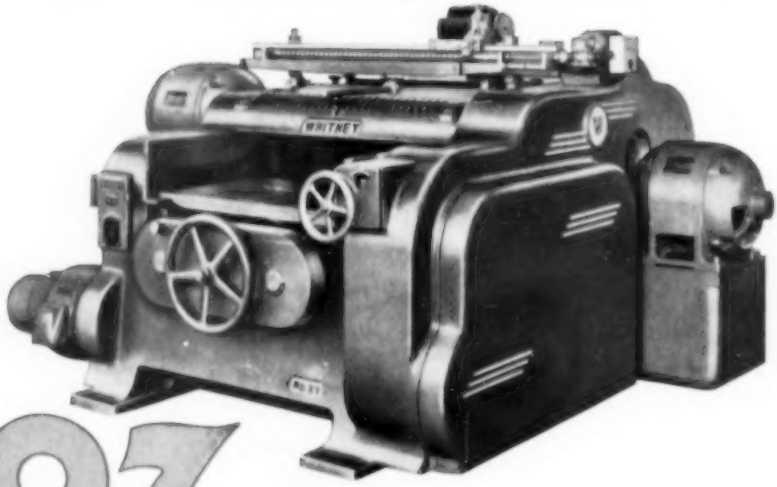
- Trends
- Woodictionary
- Carbide Standards
- CMP and You

See Page 51 for the July FPRS Bulletin

A Vance PUBLICATION

The National Management and News Magazine of the Forest Products Industry.

There's nothing like it for fine production planing....



97 WHITNEY DOUBLE SURFACER

CAPACITY

30", 36", 40" and 44" widths
Planes stock 1/16" to 7" thick
Feeds, 30 to 90 feet per minute

FEATURES

- **Micro-feed Selector — any feed at touch of handwheel**
- **Variable Speed Drive — an infinite number of feeds — with brake motor**
- **Direct-reading feed indicator**
- **Power raising and lowering of bed**
- **Power-feed, self-reversing Knife Grinder**
- **Convenient Controls**
- **Safe operation**

Long on performance, short on upkeep expense, that's the record of the Whitney No. 97 Double Surfacer — the last word in fine production planing. Whitney precision construction and careful workmanship and Whitney's long experience building quality planers has made the No. 97 the outstanding double surfacer in the field.

You can't beat today's rising costs with equipment that is short of the best. The Whitney No. 97 will pay for itself in increased production, quality planing, less waste and substantial savings in your sanding and finishing operations. Write for full information. Ask for Bulletin M7.

Planer Specialists for more than 100 years.

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BAXTER D. WHITNEY & SON, Inc.

PLANERS • SHAPERS • VARIETY SAWS • MORTISERS • BACK KNIFE LATHES

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ACROSS THE COUNTRY...

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Users everywhere appreciate the *outstanding features* of this up-to-date moulder:

- Independently operated spindles with pre-selectable speeds.
- Speed selection *without* use of a frequency changer.
- Cutterheads are jointed at high spindle speeds.
- Infinitely variable feed rate from 25 to 225 feet per minute without stopping the machine.
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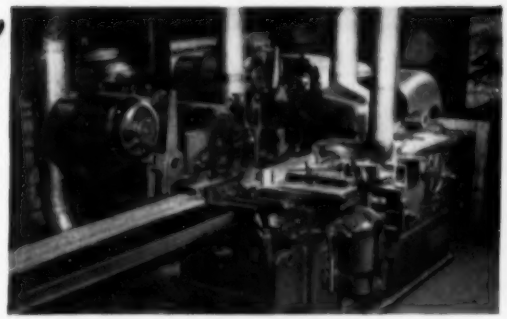
- Reduced knife cost.
- Reduced head cost.
- Lower operating costs.

All this is backed by alert, experienced EKSTROM CARLSON SERVICE that insures maximum efficiency.

ASK FOR NEAR-BY NAMES!

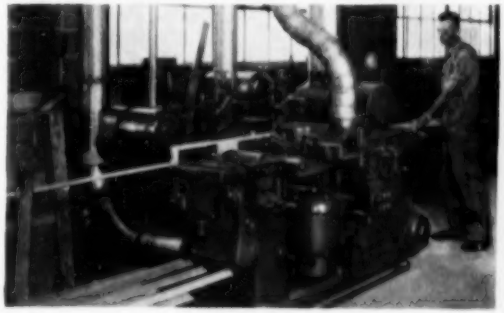
The three widely-scattered installations pictured here are typical of the scores of ECCo Hi-Speed Moulders now in use from coast to coast. If you want to inspect ECCo Hi-Speed Moulders in operation, let us send you a list of installations nearest you. Visit one or more of these places and SEE FOR YOURSELF the distinctive advantages of the ECCo Hi-Speed Moulder.

Write for ... this *new* 12-page booklet (Bulletin M200) that illustrates and describes all the details of ECCo Hi-Speed Moulders and gives full specifications of the models available.



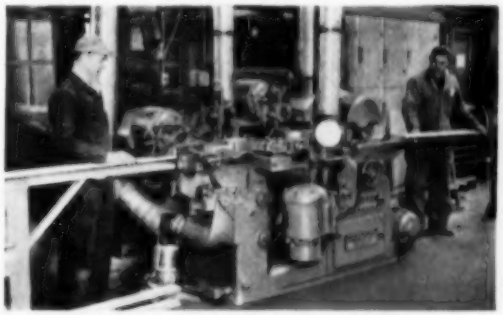
MARTINSVILLE, VA.

This is a 12" No. 468 ECCo Hi-Speed Moulder which is in constant use on a wide range of general millwork jobs.



SALT LAKE CITY, UTAH

Here an 8" No. 466 Hi-Speed Moulder is shown turning out one of numerous sticking jobs in a cabinet and fixture manufacturing company.



SAN FRANCISCO, CALIF.

This 6" No. 464 ECCo Hi-Speed Moulder is giving top performance on all kinds of general millwork in a west coast shop.

ECCO

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EKSTROM, CARLSON & CO., 1409 Railroad Ave., Rockford, Ill.

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to Quality Craftsmanship

Just as construction and wood grain are features of furniture quality, so color styling and finish determine its ultimate beauty, buy-appeal, and customer satisfaction. Be as proud of the finish on your furniture as you are of the way it is made. You can have that satisfaction by using skilled services provided by Glidden. Color stylists will aid you in emphasizing the best features of your designs and woods. Practical servicemen will help you to streamline your schedule and eliminate production bottlenecks. For prompt and effective help, write, wire or phone to Department N-751,

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National Headquarters: 11001 MADISON AVENUE • CLEVELAND 7, OHIO

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STAINS • FILLERS • GLAZES • SEALERS • LACQUERS • VARNISHES • UNDERCOATS • ENAMELS

WOOD

Volume 6 No. 7

COMBINED WITH

WOOD PRODUCTS

Volume 54 No. 7

CONTENTS JULY 1951

ADHESIVES

How to Mix Glue Successfully . . . by B. H. Thielges.... 37

BUSINESS

How the CMP Affects You . . . by R. Y. Kerr..... 25
The Wood Industry and the Defense Picture..... 30

EQUIPMENT

Keep Spray Guns Clean for Faster Finishing . . . by J. E. Hyler..... 28

FURNITURE

Safety Pays Profits at Kroehler..... 26

LUMBER & LOGGING

Proper Log Grades Mean Better Lumber . . . by W. G. Stump..... 32

MAINTENANCE

Grinding Wheel Care . . . Part Two..... 44

MATERIAL HANDLING

Loom Works Cuts Costs of Materials Handling . . . by V. E. Hillman..... 29

PRODUCTION

Simplified Production Control . . . by Joseph Halperin.. 33

SEASONING

Minimizing Seasoning Defects in Drying Green Oak . . . by O. W. Torgeson..... 53

STANDARDS

Carbide Standards . . . by R. D. Brooks..... 34

FOREST PRODUCTS RESEARCH SOCIETY

July Bulletin . . . by F. J. Rovsek..... 51

DEPARTMENTS

Markets	14	Trends	9
Names–Events	76	Wood Puzzlers	6
New Products	68	Wood Salutes	21
Patent Digest	18	Woodictionary	18, 40, 47

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Mixed cars comprising hardwood flooring in Straight-line standard strip and Unit Wood Blocks in oak, beech, pecan; Random Width Oak Plank — each finished or unfinished. Oak stair treads, risers, thresholds. Arkansas Soft Pine trim, mouldings, finish, yard stock.

There's a representative in your territory.

BRADLEY LUMBER COMPANY *of Arkansas*

WARREN, ARKANSAS

Wood Puzzlers

(Question and Comment)

Another new feature. If you have the answers to these problems drop us a line and we'll be glad to forward it for you.

Clothes Pin Machine

". . . For some time I have been trying to find a manufacturer of an old-fashioned round clothes pin making machine. Can you tell me who can furnish such a unit?" (Pennsylvania)
(When answering, refer to problem No. 1)

Hardwood Ashes

"We are looking for sources of supply of hardwood ashes. Can you furnish us a list of producers? It is our recollection that there were some outfits around Tennessee that made this product for fertilizer." (New York, New York)
(When answering, refer to problem No. 2)

Timberlands

"I am a young man in the sawmill business. As timber is getting very scarce here, I am seeking a new location where timber prospects are better. Could you refer me to anyone who might be of assistance to me in the matter in Texas, Arkansas, or Louisiana?" (Texas)
(When answering, refer to problem No. 3)

Shingle Machinery

"I have a shingle mill and have been making standard grades of white cedar shingles. I am thinking of making an all-clear edge-grain grade for side walls. What type machine would I need to put grooves on the face of the shingle? I understand also that there is a glass finish shingle stain. Where do I get it? Whatever information is furnished will be appreciated." (Michigan)
(When answering, refer to problem No. 4)

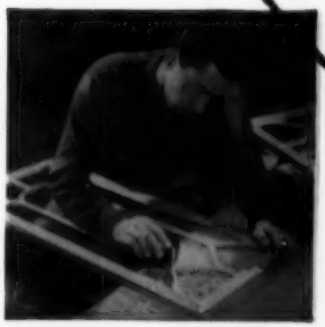
Poplar Squares

"I would like to contact concerns that want poplar squares and plain lumber in random lengths 8 to 16 ft. long. This poplar is of a white, yellowish color —the yellow bark species. It should be of real value to the furniture factories." (Wisconsin)
(When answering, refer to problem No. 5)

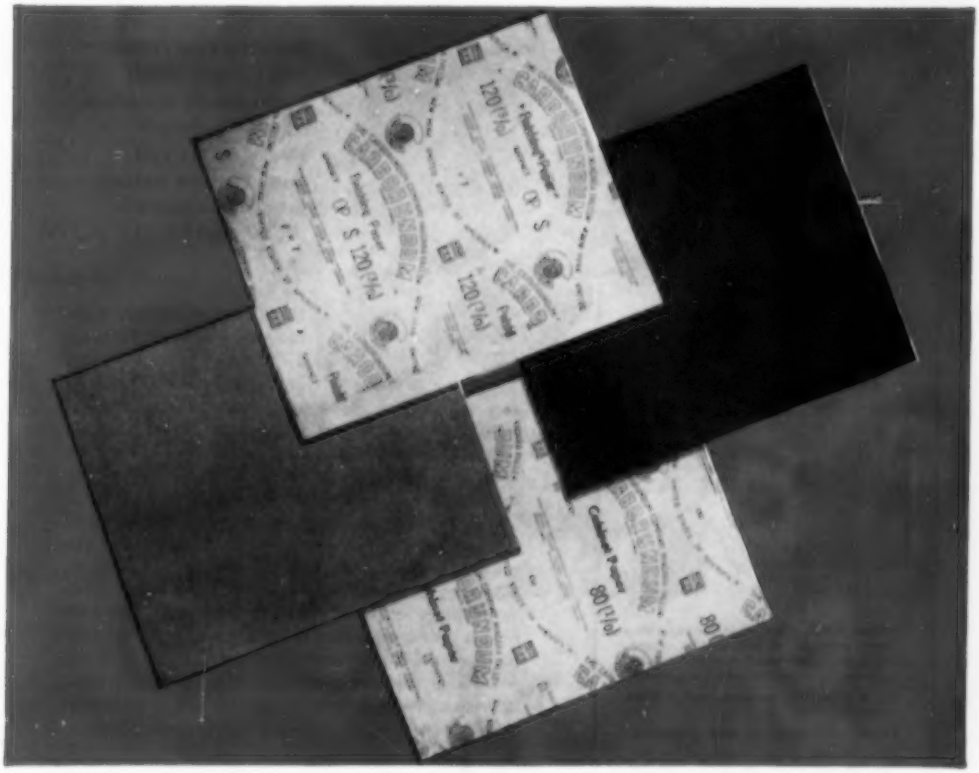
Ski Stock

"We are interested in ski stock and wish to obtain the names of buyers of this material." (Kentucky)
(When answering, refer to problem No. 6)

Smoother finishes for "flats" and curves



The exceptional flexibility in operation of Cabinet and Finishing Papers by CARBORUNDUM enables you to sand flat or curved surfaces with equal efficiency. They resist peeling and tearing, because of added backing strength in both length and crosswise directions. Loading is reduced through flexibility; cutting life is extended by special coating technique. Increase efficiency in your cabinet, finishing and rub rooms—with Cabinet and Finishing Papers by CARBORUNDUM. See your local CARBORUNDUM distributor, or write Dept. W 82-116 for full details.



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Making ALL abrasive products . . . to give you the proper ONE

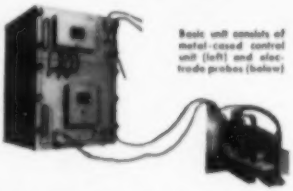
"Carborundum" is a registered trademark which indicates manufacture by The Carborundum Company, Niagara Falls, N.Y.

New, Automatic Continuous Moisture Detector

Here's a completely new device which stops costly moisture trouble before it starts, helps you manufacture better products—more profitably!

Photo shows installation with automatic marking device. Red ink is placed on all stock containing more than desired moisture content.

Quick Facts About Laucks Sentry Continuous Moisture Detector



Basic unit consists of metal-cased control unit (left) and electrode probes (below)

- Gives 100% automatic, positive continuous detection of moisture in veneer, core stock, pulpwood, lumber or other material in which moisture is a problem.
- Is a production machine—not a hand operated meter.
- Does not impede or slow production.
- Can be used on any wood species. Sensitivity: 0.1%. Can be set to check any moisture content common to woodworking practice.
- Will detect moisture regardless of where it occurs in material.
- Can be arranged to mark excessively wet stock, ring bell or activate automatic kick-off.
- Installed by factory-trained technicians. Requires no special operators — your present personnel can operate it after 5 hours instruction.
- Use-tested for over a year. Developed by Research Foundation of West Coast plywood industry.

NEW LAUCKS SENTRY Continuous Moisture Detector gives automatic, continuous production-line control of veneer or core stock moisture content—*before assembly.*

Built to meet rugged service requirements, Laucks Sentry is installed on present production equipment, operates at normal production speed, does not interrupt flow of material, requires no special operators.

Completely accurate, completely dependable, this remarkable new device can be adapted to virtually any manufacturing process in which moisture is a problem. The head of the Pacific Northwest furniture manufacturing plant in which Laucks Sentry was use-tested for over a year reports that it "paid for itself in less than six months." Other installations are being made in plywood and pulpwood plants and an adaptation is being developed for use in connection with kiln dried lumber at large sawmills.

If You Have a Moisture Problem, Write Details Today for Free Consultation

LAUCKS Sentry

Continuous Moisture Detector

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Manufactured by Instrument Division, Laucks Laboratories, Inc.

WOOD *Trends* WOOD PRODUCTS

This Month's Challenge

"It is my firm conviction that the use of steel in reinforcement of wood is in its infancy. I believe that structural members can be developed where wood is combined with steel which will save not only wood, but also steel. When concrete became reinforced it ushered in a new day in that industry. Reinforced concrete was actually a new product. Reinforced lumber may be a dream, but if it is to come true, you men of research are the ones who will develop it." Excerpt from a talk by C. Arthur Bruce before the Forest Products Research Society.

WOOD AT WAR

Pound for Pound

In wartime behind each pound of steel is a pound of wood. This statement indicates the importance of our Forest Products Industry in the present emergency. In this issue you will find a summary of the present and future position of our industry as it looks today by men who are in the best position to analyze the situation. You will also find an analysis of how CMP operations will effect the industry.

Government Purchases

Advices come from the NPA that purchases of hardwood plywood by the military will rise more than 30 percent during 1952, beginning about July 1st. It is reported that the government will require 42,000,000 square feet of hardwood plywood during the year, which compares with 32,126,000 square feet during fiscal 1951.

It is estimated that 50,000,000 square feet will be needed for shipping motors, refrigerators, etc., to the military, which would make a total of 92,000,000 square feet for defense demands.

LUMBER

Markets, Prices, Production

Although demand for lumber exceeded supply in the first quarter of 1951, there was a gradual softening of the market, especially in softwoods, which began in March and continued through April and May. Peak production of existing mills, reopening of closed mills, and a marked improvement in the freight car situation have offset the heavy demands for lumber for building, defense purposes, and industrial uses.

Uncertainty regarding price regulations has caused confusion throughout the industry. The general price freeze announced on January 26 has not worked well in the lumber industry. An interim price regulation intended to supplement and clarify the general price freeze has been studied by the Office of Price Stabilization but has not been issued. As a result many operators are still confused.

Preliminary reports indicate that production during the first quarter of 1951 was the highest of any first quarter for which records are available. Based on reports from the regional lumber manufacturers' associations, production in the first quarter totalled 9,056 million board feet, 9.9 percent less than the previous quarter, but 14.1 percent more than the first quarter of 1950.

Current production is being maintained at slightly higher levels than in 1950, aided by the continuance of favorable weather in most regions. Stumpage is reported to be difficult to obtain and many operators report high stumpage prices. The labor supply, while generally adequate, is expected to become increasingly scarce.

FURNITURE

Profits, Outlook

Wood furniture manufacturers realized an average net profit after taxes of 5.5 percent on sales in 1950, compared with 3.9 percent in 1949, according to a survey by Seidman & Seidman, Certified Public Accountants. The report states that the dollar amount of furniture manufacturers' profit in 1950 was 82 percent higher than in 1949.

In spite of present inventory and price uncertainties, we have little reason to fear that the economy is in for rough sledding, for there are two dynamic forces that are almost bound to maintain business volume. These are the defense program, with a target of spending of $50 billion by the end of the year, and the business program of private capitol expansion of about $26 billion for the year as a whole.

Referring to the housing situation in relation to the furniture outlook, Seidman said: "Home building is expected to fall off drastically during the second half of 1951. This means that furniture demand for new homes will drop sharply from present levels. However, because of the usual time lag, the shrinkage in furniture demand from this source will probably not be fully felt until next year. Also, if general business activity comes up to expectations, the replacement demand for furniture might well fill much of the void created by the shrinking demand from new homes."

FREIGHT CARS

Loadings

It is interesting to note that Freight Car Loadings for the first 23 weeks of the year ending June 9th show an increase of 27.1 per cent over 1950 car loadings, and 27.1 per cent over 1949.

Forest Products Carloadings for the 1st 23 weeks were:

	Carloads	% Increase
1951	1,066,220	
1950	875,098	21.8
1949	838,795	27.1

Plywood Cars

Many readers have asked the status of the Unicel Plywood Freight Car announced in the November 1950 issue of WOOD. Latest reports indicate that 75 cars have been built or are on order. This car represents a chance for the Forest Products Industry to regain one of its lost markets. Forest Products was second only to bituminous coal as a source of gross rail freight revenue in 1949. Herein lies a real opportunity for every member of our industry using freight cars to help regain this lost market. Start today requesting plywood freight cars when you send in your requisitions each day for cars to ship your forest products. If enough of you do it, the railroads will soon take action and order plywood instead of steel freight cars.

FOR *Stronger Bonds*

PLUS 2 OTHER BIG EXTRAS...

Free to you

A COMPREHENSIVE TECHNICAL SERVICE

Files of the Plaskon Technical Service are full of case histories proving how helpful this service can be in preventing the development of glue-line troubles—and helping you to solve problems wherever they exist. Plaskon experts are used to working—in shirtsleeves—with users of glues. And where the situation demands, they can call on the facilities of the modern Plaskon Technical Service Laboratories for aid on gluing problems.

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MORE FOR YOUR MONEY IN PLASKON *POWDERED* GLUES, TOO... THANKS TO *Triple-Action* HARDENERS

The same TRIPLE-ACTION Hardeners now supplied separately with Plaskon Liquid Resin Glues have been used for years in the scientific blending of Plaskon *Powdered* Resin Glues. Their performance has helped create the preference which has made Plaskon the world's largest producers of resin glues in powdered form.

PLASKON.
RESIN GLUE

HOUSING

"Pre-Fab" Forecast

More than 10% of all new residential construction in 1951 will be of prefabricated construction according to a prediction by the United States Savings and Loan League. The anticipated 1951 output will be 100,000 homes against 55,000 sold in 1950 which represented an increase of nearly 60 percent over 1951.

Approximately 85 percent of the 1950 homes sold at less than $9,000. Three chief reasons are cited by the league for the anticipated increase: 1. Prefabricators will be hampered much less than conventional home builders by shortages of materials, labor and mortgage curbs. 2. The heavy demand among building contractors for "pre-fab" homes to serve low income families. 3. Critical housing shortages in defense areas are creating demands for quick economical construction. Today nearly all factory built homes meet standards of FHA and VA.

BOXES & CRATES

Shipments

The wooden box and shook industry registered a gain of 29.0 percent in shipments during the first quarter of 1951 over the similar quarter of 1950, according to reports from 143 different manufacturers as compiled by the National Wooden Box Association.

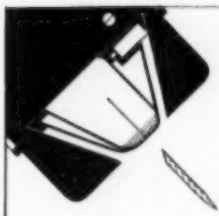
Reports from 62 manufacturers operating east of the Rockies registered a gain of 24.6 percent while 81 manufacturers operating west of the Rockies showed an increase of 31.5 percent.

March shipments did not quite hold up to the first quarter average, the increase east of the Rockies being 18.3 percent and west of the Rockies 15.1 percent for a national gain of 16.2 percent during the month.

EQUIPMENT

Saw and Knife Doctors

Our industry is dependent upon the sharpness of its saws and knives. A recent survey discloses that the average age of these craftmen in the Forest Products Industry is well over sixty years of age. Unfortunately, a mere handful of trained men are coming along to take their places. In a few years this can well become a serious problem for the industry. The following ideas may help to solve this problem. 1. Set up training schools such as has been done in dry kiln



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SEND US SAMPLES OF YOUR WORK FOR NAILING
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and gluing courses. 2. Cooperative setups where a group of saw and knife users set up a central sharpening and grinding shop. 3. Further development of machinery and processes to eliminate the craftmanship. 4. Establishment of sectional or territorial shops by the manufacturers. A stitch in time is now needed.

Carbide Tools

The use of carbide saws and knives is fairly new in the industry and like anything new it has required considerable trial and error experimentation and cooperation between industry, saw and knife manufacturers and the carbide producers. Today much has yet to be learned about the proper application of carbide tipped tools by the industry and manufacturers. Longer life, improved workmanship and a definite need for better cutting methods has been responsible for the amazing increase of carbide tools throughout the industry. On page 34 is one of the most progressive steps yet made. . .a proposal for the standardization of carbides for use in the Forest Products Industry.

Amazing Bottleneck Smasher for Wood Gluing Departments

Thermatron Offers a Complete Engineering Service, Too!

The picture is complete when THERMATRON—under one contract *and one responsibility*—supplies the electronic equipment, presses and "know-how" in your wood gluing department. Eliminate the bottleneck for faster, better, more economical production!

THERMATRON will analyze your product and production, recommend the generators and jigs to carry the load, supply them custom built, if necessary . . . But we don't stop there! The production set-up, including adequate power and air supply, adjustment of jigs, instruction of your factory personnel . . . all these are important links in the chain of THERMATRON service. Maintenance service, too, is available on short notice.

We'd like to discuss your wood gluing problems with you. Whether you are interested in initiating an electronic bonding installation—or whether you are in need of information concerning existing equipment, THERMATRON engineers are at your disposal for consultation without obligation. Write us now, and also request our new bulletin W-4.

Thermatron

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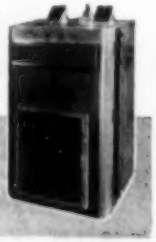

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UTILIZATION

Soil Improver

It is facinating to contemplate the actual and potential uses of wood waste. Wood, for instance, is organic matter in its cheapest form. In addition, it is a longer lasting form that that produced by the usual green manure and cover crops such as soy beans and rye. Organic matter as it breaks down after having been applied to the soil, produces humus. A high humus content is one of the essentials of good crop soils. It makes heavy soils more porus and easy to work, aids soil aeration and root penetration. It improves physical structure and enhances the water-holding capacity of light soils. A high humus content is one of the best aids in the control of soil erosion, wind and water.

Congratulations to Teco for their development of Fersolin, a sawdust soil improver, for the Hardwood Industry Research program. The process is neither complicated or expensive. The marketing opportunities are unlimited. License applications are now being received for the manufacturing and sales rights on this product.

Lignin

Lignin, a waste material from the production of wood pulp, may become more valuable than the pulp itself as the result of a new process developed by two University of Washington scientists for separating lignin and pulp components. The discovery was made by Bror Grondal, professor of forestry and Piotr Zenczak, a research assistant. The new method uses triethylene glycol as a solvent instead of the usual acid or alkali solutions. The resulting lignin complex has valuable adhesive qualities and can be used as a plastic. It also contains many of the compounds now obtained from coal tars. Lignin complexes in the form of waste liquors are now being dumped, burned or partially regained at high costs to paper mills. They also cause a serious pollution problem in rivers and streams. If commercial tests prove successful, the new process can well become one of the most important forest products utilization developments in recent years. It could double the value of wood pulp, as lignin comprises about 50% of the raw material.

For Market News See Page 14
How CMP Affects You . . . Page 25

Higgins, Inc. uses waterproof Lauxite MF-300 for their bonded mahogany cruisers and hardwood floors

waterproof bond : colorless glue line

When you're looking for waterproof performance from your adhesives—as Higgins does for their cabin cruisers and hardwood floors—we suggest you investigate Monsanto's melamine-formaldehyde resin, Lauxite MF-300.

Used alone or to fortify Monsanto's urea adhesive resins, Lauxite MF-300 produces a weatherproof-waterproof bond . . . PLUS a bond of superior strength and durability; and a colorless glue line.

Lauxite MF-300 cures rapidly at intermediate and hot press temperatures. Veneer moisture content is not critical; pressing cycles are short. And – there's no need to wash glue room equipment when converting from urea to melamine glues.

For uniformly high quality production *day after day*, use Lauxite MF-300. For information, write: MONSANTO CHEMICAL COMPANY, Plastics Division, Room 5204, Springfield 2, Mass.

Lauxite Reg. U.S. Pat. Off.

The big MONSANTO family of adhesives

SERVING INDUSTRY . . . WHICH SERVES MANKIND

MARKETS

These prices are estimates made available by Mr. George Land, publisher of the *Hardwood Market Report*, and reflect prices as indicated in his copyrighted issue of June 23, 1951. Mr. Land's complete report is available weekly; those who want the entire list should contact him c/o Box 5716, Memphis 4, Tenn.

SOUTHERN HARDWOODS

F.O.B. mills—Texas & Louisiana area—estimate of present FOB Texas & Louisiana mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade on band-sawn Southern Hardwoods in carload quantities, random widths & lengths, rough air dried & graded in accordance with NHLA rules on inspection. Prices in dollars per M', on straight cars of upper bracket grades premiums are frequently being paid.

ASH—FIRM TEXTURE

	FAS	No. 1C	No. 2C
4/4-in.	155	110	62
6/4-in.	165	120	67
8/4-in.	180	140	70

BASSWOOD

4/4-in.	160	135	80
6/4-in.	170	155	87
8/4-in.	180	145	90

BEECH

4/4-in.	135	100	62
6/4-in.	145	110	67
8/4-in.	167	127	72

CHERRY
Same as Appalachian

RED GUM—PLAIN

4/4-in.	210	160	70
6/4-in.	230	170	75

RED GUM—QUARTERED

4/4-in.	225	175	75
6/4-in.	250	200	90
8/4-in.	260	210	95

SAP GUM—PLAIN

	FAS	No. 1C	No. 2C
4/4-in.	132	112	
6/4-in.	155	135	
8/4-in.	165	145	

HACKBERRY

4/4-in.	105	92	65
6/4-in.	130	108	76
8/4-in.	140	115	77

HICKORY
Temporarily suspended

MAGNOLIA

4/4-in.	170	135	78
6/4-in.	185	145	87
8/4-in.	205	160	90

SOFT MAPLE—WHAD

4/4-in.	130	110	67
6/4-in.	145	120	77
8/4-in.	155	125	80

SOFT MAPLE—WHND

4/4-in.	120	96	65
6/4-in.	130	105	75
8/4-in.	135	110	80

RED OAK—PLAIN

4/4-in.	180	110	75
6/4-in.	192	135	81
8/4-in.	200	140	81

WHITE OAK—PLAIN

4/4-in.	185	115	75
6/4-in.	195	140	81
8/4-in.	205	145	81

PECAN

	FAS	No. 1C	No. 2C
4/4-in.	117	97	55
6/4-in.	135	115	70
8/4-in.	155	130	70

POPLAR—PLAIN

			No. 2A
4/4-in.	170	160	130
6/4-in.	185	175	140
8/4-in.	205	195	150

SYCAMORE—PLAIN

			No. 2C
4/4-in.	117	97	60
6/4-in.	125	105	60

TUPELO—PLAIN
TUP TEXTURE—DEEP SWAMP

4/4-in.	132	112
6/4-in.	155	135
8/4-in.	160	140

WILLOW

4/4-in.	142	122	65
6/4-in.	142	122	67
8/4-in.	150	125	70

APPALACHIAN HARDWOODS

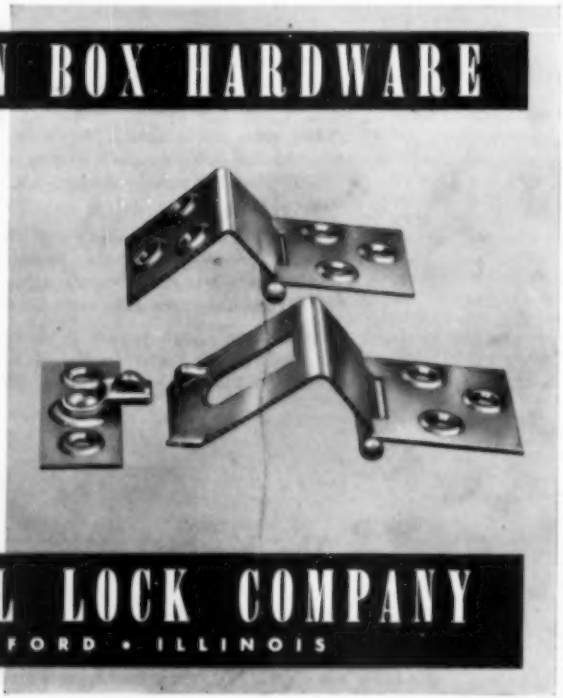
F.O.B. mills—Johnson City, Tennessee area—estimate of present FOB Appalachian mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade of band-sawn Appalachian hardwood in carload quantity, random widths & lengths, rough, air dried, & graded in accordance with NHLA rules of inspection. Prices in dollars per M', on straight cars of upper bracket grades, premiums are frequently being paid. Basis selected for the purpose of indicating transportation costs to principal consuming markets from Johnson City, Tennessee area.

AMMUNITION BOX HARDWARE

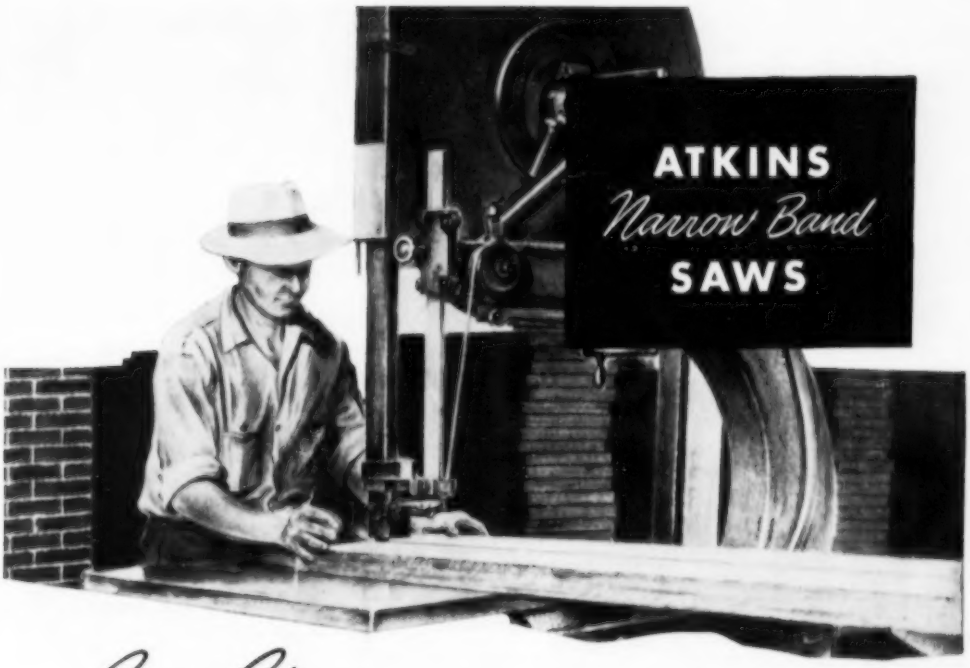
NEW NO. 76-0-46 REV. 5
MARCH 19, 1951

NATIONAL LOCK, a large and dependable World War II supplier, is geared up to serve you on ammunition box hardware (as illustrated), wood screws, as well as many other items that fit into your defense production plans. • Both peace and wartime experience, coupled with NATIONAL LOCK'S extensive plant facilities, places us in a position to be of valuable assistance to you. • Send complete information and prints whenever possible.

ASK ABOUT OUR EXTENSIVE LINE OF HANDLES . . . HINGES . . . HASPS . . . SCREWS . . . BOLTS



NATIONAL LOCK COMPANY
ROCKFORD • ILLINOIS



Stay Sharp Because They're TOUGH!

ATKINS *"Silver Steel"* band saws are designed and built for rugged service! Uniform in quality, properly heat-treated, correctly set and filed—these precision-made saws assure the longest possible service at minimum maintenance expense! They are easy to file! They cut smoothly and true! In short—like all *"Silver Steel"* products—they'll save you money and serve you better!

ATKINS Improved Diamond Point FILES

Here's the proper cut file for your filing machines! ATKINS *"Silver Steel"* files are above and apart from ordinary files. They stand highest quality at lowest cost!

E. C. ATKINS AND COMPANY

Home Office and Factory: 402 S. Illinois St., Indianapolis 9, Ind.
Branch Factory: Portland, Ore. • *Knife Factory:* Lancaster, N.Y.
Branch Offices: Atlanta • Chicago • Portland • New York

ATKINS
"ATKINS ALWAYS AHEAD"

ATKINS

"Silver Steel" PRODUCTS

TOUGH ASH

	FAS	FIF	No. 1C	No. 2C
4/4-in.	160	150	110	67
6/4-in.	180	170	122	72
8/4-in.	190	180	147	85

BASSWOOD

				No. 2A
4/4-in.	180	170	130	84
6/4-in.	190	180	137	94
8/4-in.	195	185	147	96

BEECH

				No. 2C
4/4-in.	145	135	110	75
6/4-in.	160	150	120	75
8/4-in.	170	160	120	80

BIRCH

4/4-in.	205	195	140	80
6/4-in.	220	210	150	85
8/4-in.	230	220	155	90

BUCKEYE

4/4-in.	135	125	100	65
6/4-in.	160	150	115	72
8/4-in.	165	155	120	78

CHERRY

4/4-in.	200	190	135	80
6/4-in.	235	225	160	85
8/4-in.	250	240	170	90

CHESTNUT

4/4-in.	165	...	115	60
6/4-in.	170	...	120	62
8/4-in.	175	...	125	62

HICKORY

4/4-in.	125	115	78	53
6/4-in.	145	135	86	58
8/4-in.	165	155	90	60

HARD MAPLE

4/4-in.	190	180	125	80
6/4-in.	200	190	135	84
8/4-in.	205	195	145	90

SOFT MAPLE

4/4-in.	160	150	115	67
6/4-in.	170	160	125	69
8/4-in.	175	165	130	72

RED OAK—PLAIN

	FAS	FIF	No. 1C	No. 2C
4/4-in.	185	175	120	84
6/4-in.	200	190	135	101
8/4-in.	215	205	145	101

WHITE OAK—PLAIN

4/4-in.	200	190	125	84
6/4-in.	220	210	145	101
8/4-in.	225	215	155	101

WHITE OAK—WHND

4/4-in.	115	105	85	...
6/4-in.	140	130	110	...
8/4-in.	150	140	115	...

YELLOW POPLAR—PLAIN

				No. 2A
4/4-in.	210	200	140	88
6/4-in.	220	210	150	93
8/4-in.	230	220	160	..

POPLAR SQUARES

	FAS	No. 1C & SD
4x4-in.	245	175
6x6-in.	280	199
8x8-in.	340	200

WALNUT—STEAM TREATED

	FAS 6' & up	FIF 6' & up	No. 1C	No. 2C
4/4-in.	350	305	185	80
6/4-in.	370	325	210	95
8/4-in.	385	340	235	100

Walnut list reflects average fob mill, all areas, liasing point not generally observed.

NORTHERN HARDWOODS

Estimate of present FOB Wausau, Wisconsin mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade on band-sawn Northern hardwoods in carload quantities random widths & lengths, rough air dried & graded in accordance with NHLA rules on inspection. Prices in dollars per M'.* On straight cars of upper bracket grades, premiums are frequently being paid.

BROWN ASH

	FAS	No. 1C	No. 2C
4/4-in.	145	105	73
6/4-in.	155	120	83
8/4-in.	160	130	88

BASSWOOD

4/4-in.	180	125	78
6/4-in.	190	135	88
8/4-in.	195	145	96

BEECH

4/4-in.	145	100	68
6/4-in.	160	115	78
8/4-in.	165	120	80

BIRCH

4/4-in.	265	145	80
6/4-in.	275	160	90
8/4-in.	280	175	100

ROCK ELM

4/4-in.	135	115	65
6/4-in.	145	125	75
8/4-in.	150	135	80

SOFT ELM

4/4-in.	125	105	71
6/4-in.	135	115	81
8/4-in.	140	120	86

HARD MAPLE

4/4-in.	190	130	78
6/4-in.	200	140	81
8/4-in.	205	145	83

SOFT MAPLE

4/4-in.	155	120	72
6/4-in.	170	130	83
8/4-in.	185	140	90

RED OAK

4/4-in.	175	125	77
6/4-in.	185	145	82
8/4-in.	195	155	85

* Air dried Northern Hardwoods are no longer available and sales presently being made cover green stock or stock only partially seasoned. Orders are being placed for stock to be cut and shipped green when accumulated.

WHOA!

Don't overload your production capacity! Let *Gamble Brothers* furnish the parts you need to handle defense orders, without delay and without investment in new equipment, facilities, and personnel. Use Gamble Brothers' solid or laminated wood parts, rough or finished, ready to assemble.

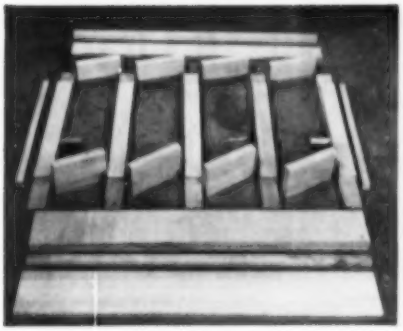
Gamble Brothers, with fifty years' experience in wood engineering, will also be glad to help you solve your re-design problems . . . with no obligations.

WRITE TODAY!

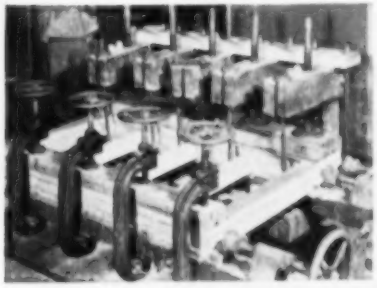
Gamble Brothers Incorporated

Engineered Wood Parts in Southern and Appalachian Hardwoods, Walnut or Mahogany

MAIN PLANT: LOUISVILLE 9, KY. • BRANCH: MONTGOMERY, ALA.

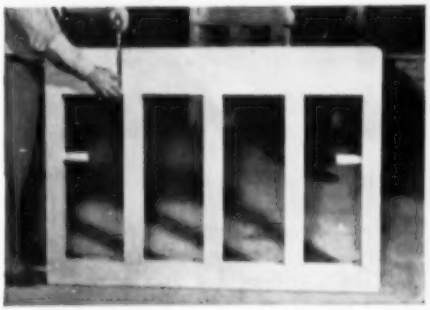


These 20 parts forming the back frame of a popular-make piano, are ready for assembly.



Assembly is placed in a clamp press for electronic bonding. Heating time is only nine minutes.

Bonding completed, the assembly is ready for machining. Has maximum strength and dimensional stability.



why take 4 hours?

bond it electronically in 9 minutes!

THIS manufacturer of top-quality pianos installed THERMEX Electronic Bonding Equipment to speed the fabrication of straight and curved wood components with these results, compared with the cold press methods:

Capital equipment is 25% lower than would have been required for cold-pressing facilities. Jig costs are 75% lower. Man-hours are reduced more than 30%. Space requirements are 50% less. Bonding jobs that formerly required hours are now done electronically in a few minutes.

For example, the back assembly of the piano is composed of 20 separate pieces, as shown above. It is bonded electronically in only nine minutes. Cold pressing would require four hours, and it would take several days for the glue lines to be cured satisfactorily.

Curved parts, such as the top center panel are now thinner – requiring 35% less material – yet are far stronger and better looking. The one-piece construction costs 20% less to finish. This part was formerly made of three pieces joined by the tongue and groove method.

Find out how you can match these speeds, improve your products, and lower your production costs with THERMEX Electronic Bonding Equipment. Write The Girdler Corporation, Thermex Division, Louisville 1, Ky.

Top center panel. New one-piece design, shown at top, is bonded electronically. Former construction is shown below.

Thermex

ELECTRONIC BONDING EQUIPMENT

THERMEX – T. M. Reg. U. S. Pat. Off.

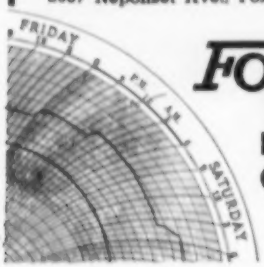
EDGE-BONDING OF LUMBER • MOLDING OF LAMINATED PARTS • BONDING PANELS TO FRAME • FABRICATION OF ASSEMBLIES • BONDING OF PLYWOOD

That's why 9 out of 10 dry kiln operators prefer Kiln Control by Foxboro!

Even rough work like log-driving requires men with experience in doing one thing *well!* And for the precision task of controlling your dry kiln, it's *doubly* important to obtain equipment built by experienced specialists in instrument design.

Foxboro *originated* — more than thirty years ago — the type of Recording Humidity Controller used on dry kilns, and has been the leading supplier ever since. More than 9000 installations are eliminating degrade loss, giving closer control, quicker, safer drying, and year-'round service.

Put this experience to work for you. Foxboro Dry Kiln Controllers include the following features: Multi-Zone (3 controllers in 1); Dual Dry Bulb (for reversible fan operation); Duplex Wet Bulb (for steam-spray and damper operation.) **The Foxboro Company, 2387 Neponset Ave., Foxboro, Mass., U.S.A.**



FOXBORO
REG. U. S. PAT. OFF.

DRY KILN CONTROL

PATENT DIGEST

by Royden C. Rinker

Molding

H. E. Bowers (to New England Box Co.). U.S. 2,547,997, April 10. Molding an aqueous dispersion of feltable fibrous material derived from wood with which is mixed a water insoluble filler by placing in a mold cavity, compressing, and heating.

Molding Material

H. E. Bowers (to New England Box Co.). U.S. 2,548,095, April 10. Producing a construction material having properties of natural wood by mixing lignocellulose fibers with uncooked starch and water, transferring to a mold, and heating under pressure.

Fishing Rods

F. Banninger. U.S. 2,548,336, April 10. Producing fishing rods by impregnating wood with waterglass, drying, immersing in a solution of phenolic resin, drying, and curing.

Kiln

E. V. Smith. U.S. 2,548,403, April 10. In combination with a dry kiln having several lumber-supporting cars arranged in tandem, means positioned along the sidewalls of the kiln for alternately subjecting opposite sides of the lumber to a drying medium.

Splint

C. Eames (to Herman Miller Furniture Co.). U.S. 2,548,470, April 10. A curved sheet-like article comprised of laminated wood veneers.

Tannins

G. Carrara. U.S. 2,548,588, April 10. Recovering tannin from quebracho wood, gambir leaves, mimosa bark, myrobalan fruit, divi-divi pods, or algarrobilla berries by pulverizing, charging into a vessel, percolating water therethrough, concentrating the percolate, cooling to 0°C. finally extracting with ethyl acetate.

Sawing Apparatus

H. M. Benge. U.S. 2,548,698, April 10. A bandsaw, a table, a pattern table adapted to have movement on the table, said pattern table having an edge disposed next to the bandsaw conforming to the shape of the piece to be cut from a workpiece.

Waterproofing

D. D. Pew (to Stopall Waterproofing Manufacturers, Inc.). U.S. 2,549,127, April 17. Wood waterproofing composition comprising a chlorinated polyphenyl, hydrogenerated methyl abietate, a methyl phenyl polysiloxane and solvents.

Chain Saw

W. H. Rathert and C. W. Wilson (to J. Neils Lumber Co.). U.S. 2,549,236, April 17. A log-bucking chain saw.

Cutter

A. C. Skelton. U.S. 2,549,251, April 17. A cutter comprising a

(Continued on page 47)

WOODICTIONARY

SHOTGUN FEED

An extremely fast hydraulic saw carriage return which utilizes steam and a piston rather than a cable.

(Dwg. So. Pine Assoc.)

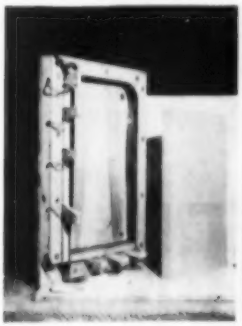
Faster, more durable
EDGE-BANDING, ASSEMBLY GLUING

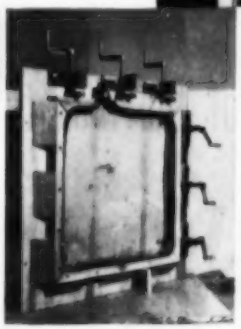
. . . with Borden's Resin Glues and the new resistance heaters

Here's how table-top makers beat shortages of certain types of assembly glues and metal edging.

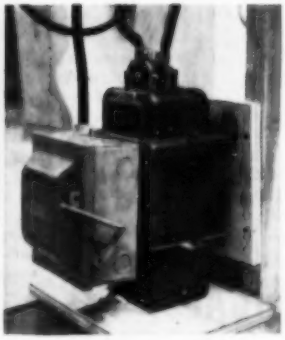
They use CASCAMITE or CASCO-RESIN urea resin glues . . . and bond veneer or Formica edge-bands in *one or two minutes* with versatile resistance heaters.

Borden's urea resins are easy to mix and provide long working life . . . yet they cure quickly under heat to form a durable, water-resistant, stain-free bond that "up-grades" the finished piece.





▲ Using the resistance heater without an assembly jig for "special order" edge-banding or repairing and patching. Curing cycle, with CASCAMITE No. 12 dry powder urea resin glue: 30 seconds. The same method can be applied to corner joints, laminated parts, molded parts. Hidden joints can be preheated *before* assembly.

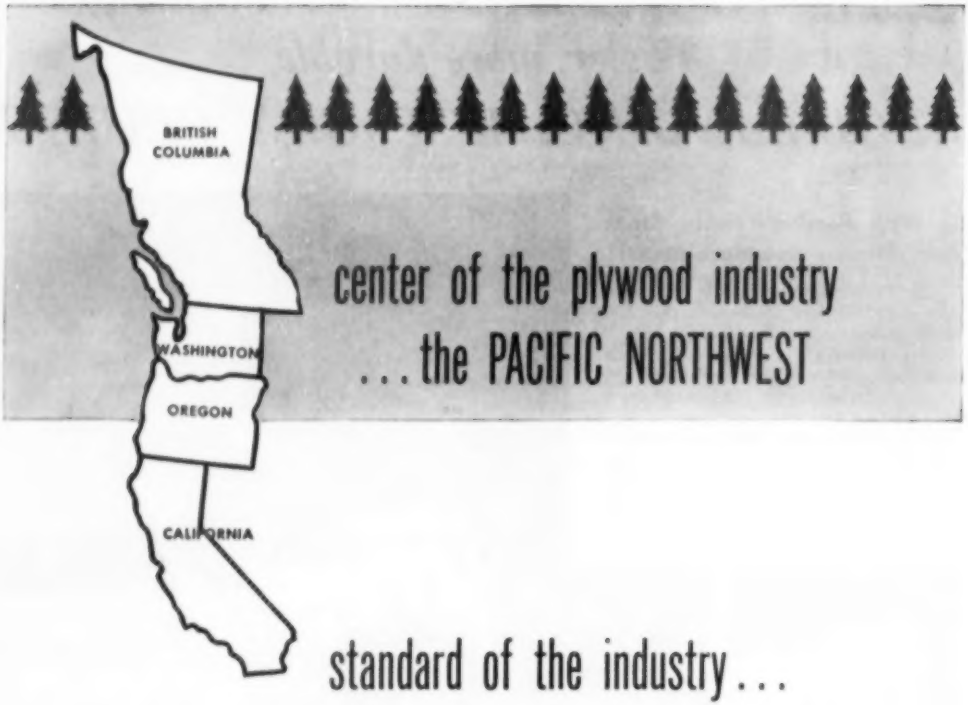


▲ Set-up for edge-banding 3 edges of a table top. Power unit mounted under assembly bench. At right: close-up of power unit showing control switch and multiple taps to control heating speed. (Photos from *Long Island Beauty Supply Co.*, Elizabeth, N. J. Resistance Heaters made by *Washburn Electric Co.*, Englewood, N. J.)

▲ Typical jigs, utilizing wedges and clamps, for edge-banding irregular shaped cocktail and lamp tables. Air hose may be used in place of wedges or clamps. Heater strip operated at about 300° F. Average curing cycles are 1 or 2 minutes with CASCAMITE No. 12. (Photos from *Baxter Crafts*, Bronx, N. Y.)

For good glues, and good advice on new equipment to do the job *faster*, call your Borden Glue Man . . . or write to: Technical Service Department, The Borden Company, Chemical Division, Dept. W -71, 350 Madison Avenue, New York 17, N. Y.

Borden's
CHEMICAL DIVISION



standard of the industry...

P-398 PLYOPHEN

In the tall timber country of the great Pacific Northwest lies the heart of America's thriving plywood industry. Here you will find RCI sales representatives at your service all the way from California to British Columbia. In the center of this area, RCI's Pacific Northwest Division laboratory in Seattle is constantly at work improving production methods and glue formulations, and producing such top quality products as P-398 Plyophen. Millions of pounds of this liquid, water-soluble resin are used annually in the production of both exterior and interior plywood. P-398 meets Government specifications and is approved by the Douglas Fir Plywood Association. In every way it is truly the standard of the industry. Further details may be obtained by writing the Sales Department in either Seattle or Detroit.

REICHHOLD CHEMICALS, INC.

General Offices and Main Plant, Detroit 20, Michigan

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Brooklyn, New York • Elizabeth, New Jersey • South San Francisco and Azusa, California • Tuscaloosa, Alabama • Seattle, Washington • Chicago, Illinois
Liverpool, England • Paris, France • Sydney, Australia • Sassenheim and Apeldoorn, Holland • Naples, Italy • Buenos Aires, Argentina • Hamburg, Germany
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SYNTHETIC RESINS • CHEMICAL COLORS • PHENOLIC PLASTICS • PHENOL • GLYCERINE
PHTHALIC ANHYDRIDE • MALEIC ANHYDRIDE • SODIUM SULFATE • SODIUM SULFITE

C. ARTHUR BRUCE

J. A. HALL

ROY CARTER

Wood Salutes

Beginning with this issue, part of the editorial space will be given to saluting the men in the industry who are doing an outstanding job in fostering better utilization and understanding of forest products throughout the nation.

This month we honor a trio which should head any current list of forest products personalities: C. Arthur Bruce, J. A. Hall, and Roy M. Carter

C. A. Bruce

Currently the director of the lumber and wood products division of the National Production Authority, C. Arthur Bruce is responsible for production, distribution and conservation of wood products in NPA.

Since 1945 he has been the executive vice-president of E. L. Bruce Co., the largest hardwood flooring firm in the world, located in Memphis, Tennessee. He joined the firm in 1914 as sales manager and became a vice-president in 1925.

Born in Lawrence, Kansas, he was educated at the University of Chicago and Harvard. Admitted to the bar in 1908, he practiced law for two years before entering the lumber business.

Mr. Bruce makes his home in Memphis where he has been active in community affairs. He has served as president of the Memphis Chamber of Commerce, the Community Fund, and the Boy Scout Council. He is chairman of the board of trustees of Le Moyne College (negro) of Memphis.

In 1932 and 1940 he was the republican candidate for governor of Tennessee.

Lumber association activities include stints as president of the National Lumber Manufacturers' Association (two years), Southern Hardwood Producers, Inc., the Hardwood Dimension Manufacturers group, and the National Oak Flooring Manufacturing Association. In NRA days, he was stationed in Washington as executive officer of the Lumber Code Authority.

J. A. Hall

The latest in a long line of distinguished men to head the Forest Products Laboratory in Madison, Wisconsin, J. A. Hall or "Doc" to those who know him, has an outstanding career behind him and a brilliant future ahead. He comes to the Laboratory from Portland, Oregon, where he was director of the Pacific Northwest Forest and Range Experiment Station, U.S. Forest Service, from 1945 till March 31, 1951.

A Hoosier from a spot near Paoli, Indiana, Dr. Hall received his degrees from the University of Wisconsin. Research in the fruit, food and tobacco industry preceeded his joining the Laboratory in 1930 where he carried on research in the field of biochemistry of southern pines with emphasis on resin-forming processes.

From 1937 to 1939 he was associate director of the California Forest and Range Experiment station, Berkely and from 1939 to 1942 he served as director of the Central States station in Columbus, Ohio.

During the war, 1942 to 1945, he was Principal Biochemist for the Forest Service, Washington, D. C., serving as a consultant and adviser in biochemical phases of the guayale rubber project with field operations out in Salinas, Cal. He was also engaged in wood utilization and conversion programs for the Service and took an active part in bringing about the building of the Springfield, Oregon, industrial alcohol plant.

A member of the American Chemical Society, Society of American Foresters, FPRS, Phi Beta Kappa, and Sigma Xi, Dr. Hall is well-equipped to handle the many administrative duties connected with the operation of the Forest Products Laboratory.

Under his direction, the needs of industry, basic research, applied research, and the Forest Service will be melded for the common good during these tense days of "Where do we go from here?.

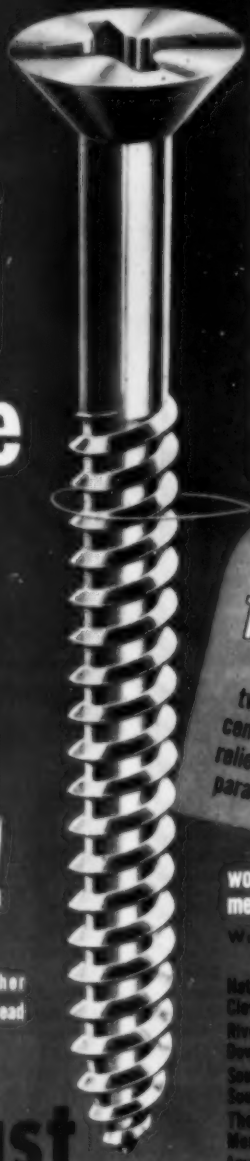
Roy Carter

Forest Products Research Society, President, Roy M. Carter is the head of the wood technology and lumber products merchandising curricula for North Carolina State College, Raleigh, N. C.

Roy was graduated from the University of Minnesota and Michigan State College, and started along the

(Continued on page 40)

The Double Thread Cuts the Time in Half!



Save assembly time . . . . . get better fastenings with the TWIN-fast Screw's four exclusive advantages

1. Twin thread doubles the pitch . . . drives the screw twice as far for each turn of the driver.
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you can identify TWIN-fast by its twin threads centered point relieved shank parallel sides

save TIME
save DRILLING
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when assembling wood to wood, plastic to wood or metal to wood

Can be furnished with either Slotted or Phillips recessed head

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The Faster Driving . . . Cost Cutting Fastener

Write for new TWIN-fast bulletin to any of these firms:

National Screw & Manufacturing Company
Cleveland, Ohio, and Los Angeles, Calif.
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The Stowell Screw Co., Ltd.
Montreal, Canada
American Screw Company
Willimantic, Conn.
Blake & Johnson Company
Waterville 48, Conn.
Continental Screw Company
New Bedford, Mass.

COMBINED FOR BETTER SERVICE—

WOOD and WOOD PRODUCTS

In order to give management, operators, and technicians in the Forest Products Industry an even better and bigger magazine, WOOD, published by the Vance Publishing Corp., has purchased WOOD PRODUCTS from the Lumber Buyer's Publishing Corp.

Starting with this issue, ''WOOD combined with WOOD PRODUCTS'' —the National Management and News Magazine of the Forest Products Industry—will bring you the latest information on operation and management methods as they apply to our nine billion dollar industry. The combined staff will cover the nation for know-how stories on production, research, development, and distribution in all phases from lumber manufacturing through finished wood products.

The merger of five year old WOOD and fifty-six year old WOOD PRODUCTS will add the following new features:

- WOOD SALUTES – editorial recognition of the top industry leaders each month.
- WOODICTIONARY – cartoons plus descriptions of common terms in the field.
- WOOD PUZZLERS – an up-to-date question and comment column.
- TRENDS – a round-up of the latest news and views.

Old favorites such as ''Patent Digest'', ''Names . . . ''Events'', ''New Products'', and ''Markets'' will also be found regularly along with ''Adhesive Advice'', ''Out in the Shop'' and ''Wood You Believe It?''

Added editorial space will also mean more feature stories, articles, and pictures each issue.

Herbert A. Vance

PUBLISHER

This moulder does its own *Rough Planing too!*

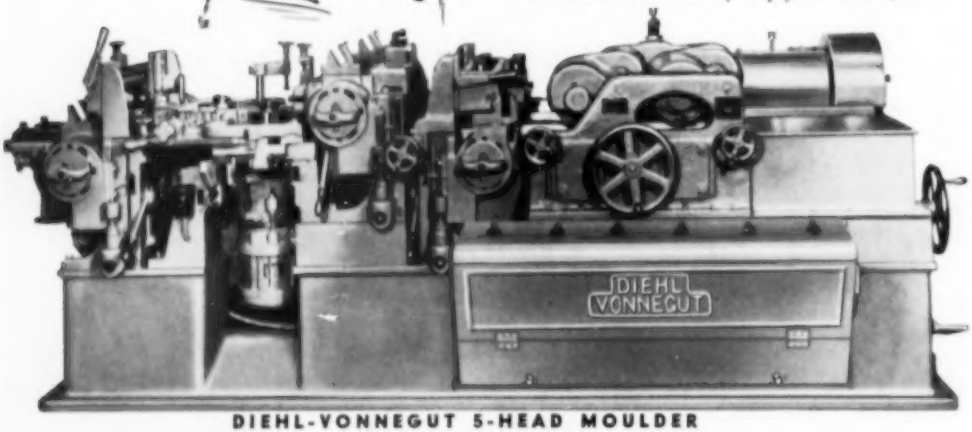
Diehl-Vonnegut 5-Head Moulder

With the Model 512 Diehl-Vonnegut Moulder, chances are you can *eliminate* a separate rough planing operation.

For the additional head of this moulder, the one which makes the first cut, is a *bottom head*. This undercut presents an accurately sized surface to the solid bed of the machine.

Thus, with the Model 512, you secure *rough planing*, to prevent worming of the stock, plus the fast, accurate moulding found in all Diehl 4-head Moulders. Because, except for the extra bottom head, this machine is set up and operated like a standard 4-head machine.

Compare the cost savings, compare the advantages, secured with a Diehl-Vonnegut Model 512 Moulder in the handling of all stocks from the smallest up to 12 inches, and you'll see why the industry is ordering this long-proved Moulder in greater and greater numbers. Why not write today for complete information, or see your Diehl Dealer? This moulder may help *you* cut costs, too.



DIEHL-VONNEGUT 5-HEAD MOULDER

On the Banks of the Wabash

THE G. M. Diehl MACHINE WORKS, INC.

WABASH, INDIANA • U.S.A.

WHETHER YOU like it or not, we're all in the same CMP boat.

How the CMP Affects You

All industry is affected in one way or another by the Controlled Materials Plan. Bob Kerr, our Washington editor, tells what may be expected.

By ROBERT KERR
Washington Editor

The Controlled Materials Plan, called back into service and fixed up with new gimmicks to meet the needs of the present emergency, is a tough pattern to understand and to follow.

Officials who put it together took over practices that worked all right in the late war, and they borrowed some principles of production management that are followed by American business. The basic structure is pretty good. Its troubles will be those of size and of detailed application.

The output of goods for direct defense is now running about a billion dollars a month and is expected by next summer or sooner to be four times that amount. But, unless we get into a global war, munitions production isn't supposed to take more than twenty percent of American economic output. However, CMP will have functions and authority in both the civil and the military economies; so it's a whale of a controls job the CMP men are walking into.

All products using Controlled Materials are formally classified, but not all will be programmed at this time. However, *the impacts of CMP, both direct and indirect, are so heavy that even companies not required to take specific action under the regulations are not smart to ignore the things.*

DO's and Civilian Use

It's clear that, under the changed regulations, still more civilian industries will be allowed to use DO priority ratings. To whatever extent their production schedules are authorized, they'll get allotments of scarce metals; and they'll also be helped in getting other necessary materials. These changes in the national materials supply pattern mean, of course, that a producer who isn't under the CMP shield will find it harder to get the supplies he needs to make his own goods. If the regulations don't touch him directly, they're fairly sure to affect some of his suppliers or some of his customers or perhaps both groups. He doesn't have to like the Plan, but it looks as though he's not going to have much luck right now in calling it off. And knowing how the CMP works is one of the new factors in knowing markets.

The Plan is not, in itself, a priority system. Not in the sense of giving a manufacturer a hunting license for materials. And neither is it a formula for limiting production. Sure enough, the limitation orders as well as priorities are used to supplement the CMP, but, quoting the National Production Authority, the Plan is a "method for scheduling production or defense and defense-supporting items, in the light of materials supply, and for allotting the basic materials to assure completion of that production."

Paper Work Problem

Much information is necessary, which helps explain the amount of paper work involved. The three basic metals—steel, copper and aluminum—become a sort of universal measuring stick with which to compare defense needs with defense supplies. And incidentally, the control of these three metals serves to control the use of other scarce materials; for example, less steel for automobiles, less rubber for tires. But the top purpose is to keep materials flowing steadily to defense industries, in correct quantities and arriving on time. That's why "lead time" on a bill of materials is held to be so important. Too much material means an excessive inventory, taking needed supplies away from other industries. Too late delivery means stopping production. Right quantities and right timing are important functions of the CMP.

Government agencies must know rather exactly the total supply of controlled materials and their rate of production. Getting this information and constantly reviewing it is the duty of the proper NPA Industry Divisions; such as Iron and Steel, Aluminum and Magnesium, Rubber, Petroleum Administration for Defense, Copper and the like.

Claimant Agency Role

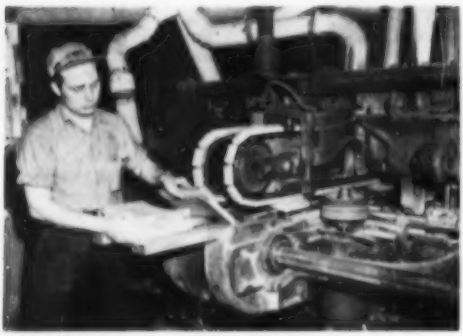
Claimant Agencies determine the need for defense and defense-supporting production and construction and present the total figures, properly classified, to the Program Bureau of the DPA. The Claimant Agencies also collect information from industry about material needs in meeting programmed production schedules. These Agencies and the NPA Industry Divisions also grant the necessary DO ratings for supplies other than controlled materials. The Claimant Agencies and the thirty or more Industry Divisions are manufacturers' points of contact with the government.

Industry has the job of "translat-

(Continued on page 66)

1. VENEER CLIPPER has a foot operated safety guard.

2. GUARD and dust collector combined on the sander.



3. SANDING wheel is located at the outfeed end.

4. SHAPERS are well hooded and guarded.

Safety Pays Profits at Kroehler

An interplant safety competition has boosted production and morale and paid off in profits for the World's largest furniture company.

Kroehler, the worlds largest furniture manufacturing orginization, has proved that safety pays off in profits. Plants 3 and 4 in Kankakee, Illinois, have increased production greatly thanks to a safety competition between the two.

Plant 3 just recently passed the 1,288,863 man hour mark without a lost time accident. Plant 4, the upholstery plant, was competing strongly with plant 3 while it was hanging up this record.

Safety is an individual matter at Kroehler, with the foremen thoroughly in accord with the idea that the individual is the key to safety. It is through the foreman that each worker is kept aware of the importance of safety on the job. Management recognizes that this safety competition which has been built into these two plants has played a large role in increased production and profits.

Plant 3 is the only casegoods operation in the Kroehler organization. It is a complete casegoods unit from the eight modern dry kilns down to the shipping dock. Some 450 employees work species such as walnut, oak, poplar, gum, and maple from the rough mill through the thirteen departments to the fine bedroom suites produced. Walnut, oak, avodire, and mahogany veneers with poplar or gum cores get the same careful treatment as the solid stock in fabrication.

Individuals do their jobs with safety. Lumber and raw materials are treated safely. All components are produced with strict adherence to quality control from start to finish.

In this regard, the research and development group has the job of checking material quality; testing new materials; making jigs, dies, and fixtures, and testing patterns. Dry kilns and plant humidity are checked by this group.

Seven Inspection Spots

Seven different types of inspectors from the chief inspector down to the final finish inspector are responsible through the chief to the plant manager. They are answerable to him rather than production. The standards are established by the engineering

5. DIELECTRIC end-gluing rig is completely shielded.

6. NAILING causes no RF interference says Company.

department. In this way, Kroehler has a definite method for producing casegoods which will meet customer specifications.

To make the production of furniture a safer operation, the plant has developed some excellent jigs and fixtures. All shaped items are run on the two spindle shapers with hand jigs to insure safe procedures. Special exhaust hoods have been built on these machines to handle all shavings and dust. (See cover for this unit in operation.) Operators on machines such as this wear safety goggles as added protection.

Novel Clipper Guards

Veneer clippers are provided with a guard, foot operated, which is so constructed that the unit will not operate unless the guard is in position.

Push sticks and anti-kick back guards are installed on all rip saws.

Moving parts of all machines have sheetmetal guards or screens so that operators will not get caught.

Belt conveyors move core from the high frequency presses to the core planing units. These conveyors are overhead and are placed in a wooden trough which protects the individuals near the equipment.

Urea both powdered and liquid are used as well as hot animal glue for cabinet room operations. Thermex edge bonding equipment and edge banding equipment, properly shielded, are installed in the rough mill and the finish machining mill.

The cabinet room utilizes a slat conveyor system as does the finishing room. Kroehler men feel that this is the most versatile for their use due to the variety of styles and operations to which the plant must adapt itself.

A 21 step finishing schedule follows cabinet room inspection. Five oven spots ranging in temperatures from 100°F and 12 minutes to 130° for 120 minutes are interspersed between the staining, filling, sealer, shade, and lacquer operations.

Schedules for suites are made up quarterly based on expected sales. Routings and piece work tickets are made for each cutting which ranges from 500-750 suites at a time. The routing tickets carry the sequence of operations, piece work tickets and the pertinent dimensions of the piece in question. This information is attached to a board and stays with the piece until it reaches the cabinet room. Each cutting has its own color of tickets to facilitate part tracing.

Maintenance Crew Role

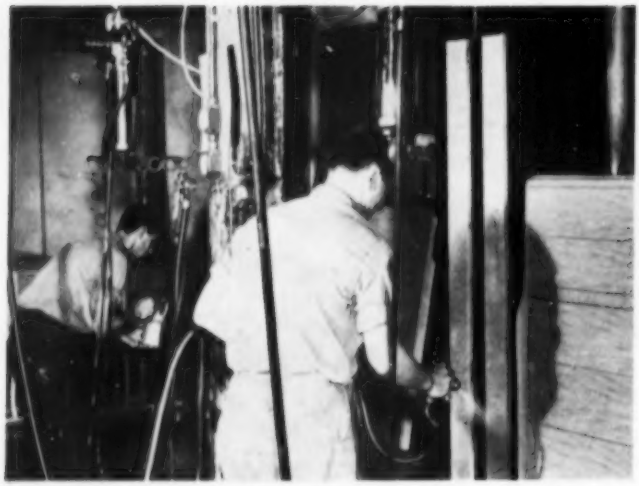
The maintenance men at plant 3 are responsible for keeping the machinery in top operating condition for safe operations. Each week, the equipment is checked and lubricated. If lubrication is necessary more than once a week, the foreman can supervise the servicing.

Knowing that safe operations depend on uniformity of stock handled, Kroehler is very carful in controlling moisture content of the lumber and veneers. About five samples from each shipment going into the kilns from the lumber source are oven tested. Kiln schedules, created for the plant's own use from FPL and the kiln manufacturer's schedules, are followed closely. Sample boards are weighed at least once a day. Lumber is steamed to relieve case hardening after the wettest sample is no more than 6½ percent MC. Then the kiln is placed on 6⅝ percent EMC until the driest sample reaches 5½ percent. Lumber is left overnight and then pulled from the kiln to be placed in a conditioning shed for at least 48 hours. Individual humidifiers are placed throughout the plant in strategic areas to keep the conditioned lumber at the proper moisture content.

Individual Responsibility

From C. B. Kroehler, plant manager for plants 3 and 4, on down to the newest employee, the importance of the proper attitude toward furniture production is a must. As in the safety program, the right way to do the job is the responsibility of each employee. Careful supervision by foremen and management works hand in hand with a pride of accomplishment on the part of the individual. The safety record and the safety program competition between the two plants has done a great deal to boost morale and increase the attitude of pride in doing the job right.

(Photos: cover, 3-4-Norval Borch National Safety Council)



CLEANLINESS and good housekeeping in the spray booth are a must.

Keep Spray Guns Clean for Faster Finishing

Spray guns are precision tools and for best finishing results they should be properly kept up. Here are the ways to do it.

By JOHN E. HYLER

Cleanliness with finishing equipment is a must. Aside from using care to avoid ordinary dirt, paint accumulations and spillage must be cleaned away. Management must check to see that good housekeeping becomes an established practice with all operators.

The spray gun should be handled with the care of a precision tool, it is. Take a rag dampened with solvent and wipe off the outside of the gun occasionally. Do not dip the tool in a full bath of solvent at any time for this will rob the gun of its proper lubrication.

It is all right to dip the air cap, or the "business end" of the gun, however. After dipping, scrub it with a good stiff-bristled brush, and repeat until it seems throughly clean. A toothpick may be used for cleaning out any small holes that may have become clogged. Use nothing harder than a toothpick; wire or other metal is definitely liable to do damage.

One can hold the tip of the gun immersed in solvent for a considerable period of time before cleaning material which resists grimly. One must use care not to get the gun down into the solvent so far as to destroy lubrication of the valve springs and other important lubrication spots. Suspending the guns by cords, business end down, so they are just so deep in the solvent is a good way to handle this problem.

Container Care

Paint containers must be kept clean, and it is far easier to clean them promptly after they are emptied. Some use a cylindrical insert in paint containers to simplify cleaning. One metal cylinder is closely fitted inside another, and is then lifted out at the end of a run.

This idea is sometimes used where many different colors of finish are applied by the tumbling process with an open-end type tilting tumbler barrel. If many colors are to be tumbled by the same tumbling machine, each run being short, it will pay to use liners.

Given a machine with a cylindrical open-end barrel, one may have as many liners for that barrel as desired. When one run is finished, the operator simply removes the liner and inserts another. There is a minimum of barrel cleaning between runs.

Air transformers must have their share of care. If they are provided with an automatic drain, they need less attention. No automatic drain on a transformer means it should be drained each day.

If one is using a mechanical type of transformer, cleaning twice a year, or at the most, quarterly is all that is necessary. Transformers having a waste pack filter will need the filtering material changed quite often. Frequency of this depends on shop conditions.

Maintenance Department

While it is all right, in plants having only one or two spray gun operators, to allow each to take care of his own equipment, there are many plants where it definitely pays to have a small department set aside for care and maintenance of finishing equipment. One man can then be made responsible for such work.

As a result, the life of most of the equipment will be lengthened, and the quality of finishing work will be upgraded. Such a man will take care of spray guns, hose, pressure feed tanks and air transformers. He can be made responsible for checking and maintaining the air compressor, for draining air lines and air receivers and all work having reference to paint-application maintenance, including cleaning of spray booths.

Where such a department is maintained, spray guns are immediately taken from the booth at the end of a spraying job, and are checked in. They are then cleaned before the material hardens on them. They are repaired, if necessary. They are also checked for proper lubrication, and carefully stored until needed.

Keep Spare Guns Handy

Where spray guns are operating continously under high production, spare guns are necessary. After a gun has been in continuous service, the operator is given another. The used one is inspected. Any worn or damaged parts are replaced before they cause any trouble. Enough spare parts are kept on hand for prompt and proper maintenance..

Design of air caps and fluid tips used on different spray guns is a highly-technical subject. The gun manufacturer knows the proper air

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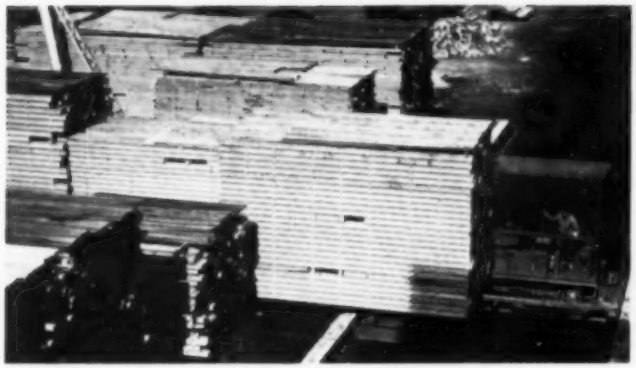

MOVING kiln trucks to and from green storage.

Loom Works Cuts Costs of Materials Handling

Utilizing track type kiln trucks, the Crompton & Knowles Loom works has reduced lumber handling materially and restacking has virtually been eliminated.

By VICTOR E. HILLMAN
Director of Research
Crompton & Knowles Loom Works, Worcester, Mass.

UNTIL recently, all lumber entering into the construction of looms manufactured by Crompton & Knowles Loom Works, Worcester, Mass., had to be handled (often piece by piece,) from three to eight times before being ready for delivery to the wood shop. As an average of 9 carloads of lumber are received per month for kiln drying, handling labor was costly and excessive. To cut handling costs, an entirely new setup has been installed and is now in use.

Substantial savings, expected to amortize the investment of some $75,000 in about three years, are anticipated. It is too early, however, to provide specific figures on cost reduction.

Both the new and the old setups occupy about the same ground area but the new facilities include new kilns installed in a new building that replaces an open shed formerly used only for storage. The former kiln building now provides extra space for dry storage where kilns were located before. Only a fraction of the new investment went into handling facilities although they are greatly improved.

In the old layout, the building marked A, contained six drying kilns along the back, adjacent to the railway siding and part of the area, now devoted to building B, which contains the new kilns, was occupied by an open lumber shed. Most of the area between this shed and the Illinois St. fence was for green storage except for three alleys between piles and paralleling the fence. These alleys accommodated the road trailer by which lumber was transferred from the unloading dock C after piling onto the trailers from railway cars.

Green piles had to be laid up, piece by piece, and the lumber removed from them was again handled in the same way when put onto trailers for transfer to kilns. There, piles were again laid up by hand. After drying, some lumber was stored in piles in front of the kilns and some went directly to building 22, (in which the woodworking shop is located) on two-wheel carts. This was not a convenient arrangement and repeated handling was costly and slow.

Small Lot Cuttings

In general, demands are not sufficient to warrant cutting large lots at one time. Each loom contains many wooden parts but the size and species of lumber for each part varies. This necessitates delivery of small lots of lumber to saws and other machines and space adjacent to these machines is quite limited. These requirements and conditions remain unchanged but, up to the loading of small trucks for shifting lumber to the shop, handling is greatly reduced and expedited.

This is accomplished as follows: Green lumber is piled on kiln trucks as it is unloaded from railway cars and remains on these trucks in green storage, in kilns and in dry storage and until it is unloaded onto hand trucks for wheeling into the wood shop.

Kiln Truck Design

Individual kiln trucks comprise a pair of flanged steel wheels mounted on short axles between a pair of channel irons and involve only small investment. It requires three pairs of trucks set on rails that are spaced 5 ft. apart to carry a standard pile

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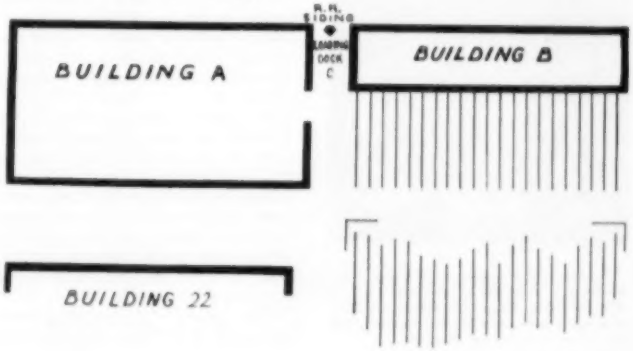
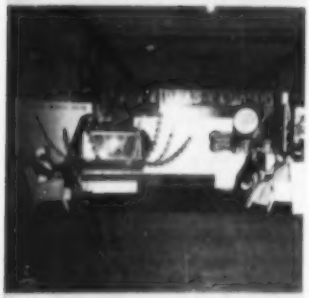
NEW layout showing: A, dry storage buildings; B, Dry kilns. Area directly below kilns is air seasoning space.



PHILADELPHIA SCENES



Visitors (from top to bottom) see: Moisture Register's demonstration; the effective Rohm & Haas exhibit; Hawker's new dowel equipment; and the latest in Onsrud shapers.

The Wood Industry and The Defense Picture

The fifth national FPRS meeting generated some interesting notes on the role of forest products in our national defense picture. Here are some highlights of keynote speakers at the May 7-11 meet.

LUMBER MOBILIZATION

C. Arthur Bruce

". . .our Mobilization Program has as its scope and objective not merely the strengthening of the military might of the United States of America to the point of effective opposition to the acts of aggression on our country, but it is a mutual defense pact under the United Nations to support collective action thereunder in line with our foreign policy objectives.

". . .Partial mobilization only is being undertaken now; and broadly viewed, the great debate of today, as it relates to mobilization, may be said to revolve around questions of how much and where.

"As the tempo of mobilization increases, wood becomes spotlighted as of greater and greater importance. A single rather dramatic reference to wood (shows that) in World War II—in 1944, of every pound of steel expended a corresponding pound of wood was expended. During the first three years of that war, direct military (requirements) took approximately one-half our entire available supply of lumber from production and inventory . . . Approximately one-half the balance went to indirect military (uses.) The balance went to essential civilian use.

"If armed conflict should come . . . it would apparently require shipment from our shores. In World War II, it is estimated that one third of that pound of wood for each pound of steel went into boxes, crates, dunnage, skids, etc. There was an average of over 150,000 feet of shipping material made of wood on each vessel sailing from our shores.

"The answer to wood's importance lies partly in the fact that wood has proved its case in the game of war.

"Can wood measure up to the demands that may be made on it? Do we have the timber supply?

"Do we have. . .a timber supply to meet the potential war demand? From the standpoint of quantity the answer is yes. The latest Forest Service figures indicate that there is an excess of one thousand six hundred billion board feet of standing timber. . .today for all practical purposes we are in balance. . .The reserves of timber on our public domain should carry its share of the load. These reserves did not carry a proportionate burden in the last war.

". . .When a species becomes in critical supply, substitutes must be found, and the same is true in the substitution of grades.

Maintain Production

". . .The problem is to maintain that (peak) production because, if war should come, all lumber produced could be used to advantage. One of the purposes of the Lumber and Wood Products Division of the NPA is to obtain the necessary steel and other critical metals and materials without which the lumber industry cannot operate. To do this, we are confronted with a real task in education as to the important part that lumber plays in mobilization and the necessity of supplying the industry with the steel for saws and other supplies necessary in forest and plant. . . .We must be a claimant for manpower to avoid repetition of shortages which are bound to occur otherwise.

"We of the lumber industry face many problems. . .America is now striving by production to keep its own economy in order, so that we may

withstand abnormal demands thereon. To do so it is essential, in my opinion, that Government assist the lumber industry to produce to the utmost. And this, frankly, is the policy of the Division which I now head."

EQUIPMENT AVAILABILITY

Roy C. DuBrucq

". . . The need for wood producing equipment is particularly acute during the limited hostilities we are engaged in today. . . Throughout the last war period, 1942-1945, the demand of the defense program on woodworking machinery was 100 percent over the demand during the 1937-1942 period. From 1946-1949 it was 120 percent higher than through the World War II period.

". . . What does this point up? To me it shows that our production of woodworking machinery was so completely used up for defense work during World War II, that we were forced, through priority demand, to neglect normal users of woodworking machinery. They were forced to convert plants to defense with very little wood products manufactured. (With the end of the war and total rescinding of priorities, the machinery industry was flooded with orders to replace old machines and keep up with production of factories which had obtained machines through priorities.)

"Production for War and Defense purposes (during the last war) ranged from 100 percent of individual plant facilities to 70 percent with an average of 90 percent.

"The present period is causing an expanded demand for wood products and requires full capacity usage of woodworking machinery equal to that of World War II. But there is still sufficient manufacturing capacity to keep up with demands of normal capacity. We are better prepared now to produce equipment. Materials will be the key to this production and a continued drive is being made to secure recognition by government authorities to make these materials available to the industry.

A Vital Need

"I have attempted to point out that woodworking machinery is a vital defense need . . . productive capacity of woodworking machinery manufacturers has grown sufficiently to equal a potential demand of defense requirements and also to absorb the demand of public welfare usage. The possibility of this production capacity being utilized depends upon the amount of material released to this industry."

Mr. DuBrucq points out further that during the last war many machines were shipped to the armed forces with enough expendable tools such as bits, saw blades, etc. to outlast the machines.

"This was improper control of materials and should definitely be avoided during this period. An effort on the part of all branches of the wood industry, the machinery manufacturers and the tool manufacturers to put pressure on government procurement officials to be reasonable about their requirements would undoubtedly permit proper distribution of these tools which would take care of all defense and normal requirements."

PACKAGING NEEDS

Clinton K. Royce

". . . Quantity-wise it appears that our needs in any future conflict will be at least 1/3 more than our World War II consumption.

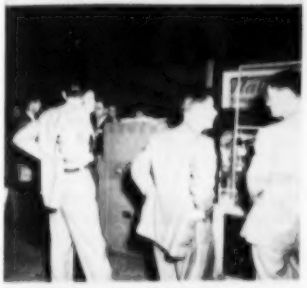
"To accomplish this, we in military packaging are doing a great many interesting things.

"To begin with, our specifications for wood containers do not call for a particular grade of lumber, but rather specify species according to more or less standard groupings which have been developed by the U.S. Forest Products Laboratory. These groupings are: Group I—Aspen, basswood, buckeye, butternut, cedar, chestnut, cottonwood, cucumbertree, cypress, fir,—balsam, noble, or white, magnolia, pine—jack, lodgepole, ponderosa, red, sugar, or white, yellow poplar, redwood, spruce, and willow. Group II—Douglas fir, hemlock, larch, southern pine. Group III—Ash—black, or pumpkin, black gum, white elm, soft maple, red gum, sycamore, and tupelo. Group IV—White ash, beech, birch, rock elm, hackberry, hickory, hard maple, oak, and pecan. The specifications say 'When any group is specified, any species in that group may be used at the option of the contractor.' The groupings have been made on the basis of density, relative hardness and strength and nailing characteristics.

"Our requirements moisture-wise are more or less standard . . . not less than 12 percent nor more than 18

(Continued on page 56)

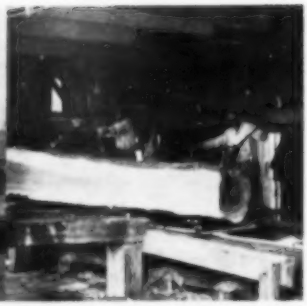
PHILADELPHIA SCENES



In usual order, Raybond's edge gluing gear; Masonite men have brief respite from the usual crowd; National Casein showed HF equipment; and Bill Delmhorst explains moisture meters.

PROPER FELLING the first profit step.

BUCKING comes after proper grading.



SAWMILLS gain from proper manufacture.

Proper Log Grades Mean Better Lumber

There's a dollar and sense reason for grading logs before they go into lumber as this Wisconsin woodworker proves.

by WILLIAM G. STUMP
Northern Casket Co.

The logging operation, the sawmill, and the manufacture of wood products from hardwood lumber are three distinctly seperate operations. And yet they are so closely interwoven that the quality control and utilization practices of each has a direct bearing and influence on the others.

The roots of quality control and utilization start in the woods with the cutting of the logs. Estimates on the amount of mis-manufactured logs run from ten to twenty percent of the total number cut. Log grades are the yardstick for determining the monetary vaule of the log as well as the means whereby the sawmill can predict the percentage of each grade of lumber that each log grade will produce. Mistakes made in the manufacture of logs are costly.

Mistakes Are Costly

To illustrate this point, assume a price of $75 per thousand feet log scale for No. 1 logs and a $35 dollar price for No. 2 logs. Then take a tree with twenty four feet of merchantable length in it and a net log scale of 260 board feet. If the two logs are cut twelve feet in length, both will be No. 2 logs with a total value of $9.10. If the bottom or butt log is cut ten feet long and grades a No. 1 log, the value of this log will be $8.25; the fourteen foot No. 2 log $5.25; or a total value of $13.50 for the two logs. Cutting the tree into two No. 2 logs would bring the logger $4.40 less than careful log-making would permit.

In order to see the full extent of such a mistake, follow the logs in the above illustration through the sawmill. If the two logs were both No. 2 logs, the average dollar value of the lumber from these two logs, based on existing grade recovery studies, would be $24.28. If the logs were correctly cut we would have one No. 1 log and one No. 2 log with a combined lumber value of $29.10 or $4.82 more. Thus the logger would lose $4.40 on the possible grades of logs from the tree and the value of the lumber would be $4.82 less than it could have been. Adding the two together you have a combined loss of $9.22 if both logs were No. 2 logs; or you could have a combined gain of the same amount if the logs had been correctly manufactured in the woods. Labor costs in either case are identical.

The sawmill suffers in another way from mis-manufactured logs; especially when logs are made No. 2's instead of No. 1's. No. 2 logs show a grade recovery of approximately twenty-five percent less FAS stock and twenty percent more No. 3 Common than do No. 1 logs. Thus the mis-manufactured log not only puts more low grade lumber in the pile but adds to the merchandising problem of its disposal.

Many mills are proud of the control of quality by their lumber inspectors so that their customers are assured of receiving only the grades they order. Unfortunately, many of these same mills do not carry this quality control all the way through the mill.

Several dollars a log can be lost through improper sawing. These losses occur from improper placement of the log on the carriage, failure to turn the log at the right time or keep in mind the location of all defects on other faces, and failure to take advantage of opportunities to up-grade lumber at the edger and end trimmer. Failure to take advantage of opportunities to up-grade lumber are the easiest to detect and can to some extent correct improper log cutting and errors at the headsaw.

Sawmills have still another quality control problem in their No. 2 logs. In a recent grade recovery study of high quality hardwood logs, one set of grades was patterned after the hardwood log grades worked out for other hardwoods by the Forest Products Laboratory and one set was based on the number of No. 1 faces on each

(Continued on page 64)

TABLE I shows log grades by No. 1 faces

Log Grade Based on No. 1 Faces (No.)	Value of Lumber per M.B.M. (Dollars)	Log Grade Patterned after F.P.L. Hdwd. Grades	Value of Lumber per M.B.M. (Dollars)
4	267.55	No. 1	292.32
3	250.91	No. 2	207.44
2	210.69	No. 3	166.64
1	188.07		
0	157.21		

OPERA

Per 100 pc

Dept. 6 Mill Room

No.	NAME	8-10-50 Estimated
1	POSTS - 4	
2	Stocksaw	4,25
3	Ripsaw	3,00
4	Face	2,00
5	Sticker	2,25
6	Trim - Bore	2,00
7	Bore for Rail	1,10
8	Groove	1,25
9	Hand Shape	2,00
10	Soft Drum Sand	2,10
11	Drum Sand	2,00
12		
13	HEAD RAILS - 2	
14	Stocksaw	2,50
15	Ripsaw	1,10
16	Face	1,10

FIG. 1. shows estimated costs.

OPERATION COSTS

Per 100 pcs.

Dept. 6 Mill Room   No. 783 Bed - Modern

No.	NAME	8-10-50 Estimated Cost	9-28-50 1st. Run	2-10-51 6 Cuttings		No.
1	POSTS - 4					1
2	Stocksaw	4,25	4,65	4,20		2
3	Ripsaw	3,00	3,00	2,75		3
4	Face	2,00	1,75	1,85		4
5	Sticker	2,25	2,15	2,00		5
6	Trim - Bore	2,00	2,00	2,00		6
7	Bore for Rail	1,10	1,10	1,10		7
8	Groove	1,25	1,20	1,20		8
9	Hand Shape	2,00	1,95	1,95		9
10	Soft Drum Sand	2,10	1,85	1,75		10
11	Drum Sand	2,00	1,60	1,50		11
12						12
13	HEAD RAILS - 2					13
14	Stocksaw	2,50	2,00	1,80		14
15	Ripsaw	1,10	1,00	1,05		15
16	Face	1,10	1,00	1,05		16

FIG. 2. shows how operating costs for different runs may be compared.

Simplified Production Control

An inexpensive production control system such as the one illustrated here can be a big help in ascertaining costs during a time of defense activity. The four basic records are briefly explained.

by JOSEPH HALPERIN

A production system which the author found quite effective is illustrated. While far from perfect it is cheap to maintain and gives an average cost which is highly effective considering the amount of effort put into it.

This system is basically divided into *three* parts:

(1) Costs; A. Original Cost Estimate; B. First Run; C. Average Run; (2.) Daily Production Sheets & Check; (3.) Recap Cards.

Establish Cost

Whenever a new item in the furniture or any manufacturing process is made, a cost is established by someone familiar with the item and the manufacturing operations. This cost is predicated upon several factors. The historical cost basis is used to determine whether any component parts have been made before or are similiar in detail to some other part. These costs are therefore quite accurate. For the remaining parts, the cost accountant relies upon his knowledge of operations and allows an approximate price for the operations. Material costs are more easily figured because one is working with tangibles.

Figure 1 shows an example of various estimate costs in several departments. These costs are what one can expect from the workers. They are based on good facts and will come fairly close to the average run cost. This is shown in figure 2 which gives the comparative costs of estimates, first run and several runs. This is important when costs are used to determine selling prices and in checking upon cost accuracy.

Figure 3 shows the daily time sheets used to determine the amount of work based upon estimated and actual pro-

(Continued on page 66)

DAILY TIME SHEET   DEPT. 6

NO. 72 (220-120)   NAME John Kilroy, A. Smith, F. Jilkis   DATE 8-16 1950

START		STOP		JOB No.	STYLE	OPERATION	Number Pieces	[illegible]	[illegible]	[illegible]	TOTAL				Amount [illegible]
7	30	11	15	128	783	Stocksaw Post	2000			1,1625	2	3	2	5	
11	15	12	15	161	1205	Stocksaw Shelf	500			.80		4	0	0	
12	15	1	00	210	612	Stocksaw Ext.Rail	500			1.25		6	2	5	
											3	3	[illegible]	0	

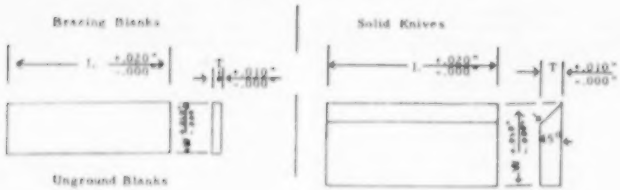
FIG. 3. Shows the daily time sheet for computing labor job charges.

785 BED - MODERN   Amount Cutting / Date Started / Date Finished

No.	No. Pieces	Articles / Name of Operation	Runs	Price	No.
1	400	POSTS			1
2		STOCKSAW	[illegible]	[illegible]	2
3		RIPSAW	[illegible]	[illegible]	3
4		FACE	[illegible]	[illegible]	4
5		STICKER	[illegible]	[illegible]	5
6		TRIM & BORE	[illegible]	[illegible]	6
7		BORE FOR RAIL	[illegible]	[illegible]	7
8		GROOVE	[illegible]	[illegible]	8
9		HAND SHAPE	[illegible]	[illegible]	9
10		SOFT DRUM SAND	[illegible]	[illegible]	10
11		DRUM SAND	[illegible]	[illegible]	11
12					12
13	200	HEAD RAILS			13
14		STOCKSAW	[illegible]	[illegible]	14
15		RIPSAW	[illegible]	[illegible]	15
16		FACE	[illegible]	[illegible]	16
17		STICKER	[illegible]	[illegible]	17
18		TRIM	[illegible]	[illegible]	18
19		TURN	[illegible]	[illegible]	19
20		SOFT DRUM SAND	[illegible]	[illegible]	20
21		ROUTE	[illegible]	[illegible]	21
22		FLUTE	[illegible]	[illegible]	22
23		BORE	[illegible]	[illegible]	23
24		DRUM SAND	[illegible]	[illegible]	24
25					25

FIG. 4. shows operation and time charges for different runs.

FIRTHITE STANDARD KNIFE BLANKS



Thick T	Wide W	Long L	Tip Number	Gram Wt.	
		3/4	KB- 356		
		1"	KB- 358		
		1-1/4	KB-3510		
		1-1/2	KB-3512		
		2"	KB-3516		
1/32	5/8"	2-1/2	KB-3520		
		3"	KB-3524		
		3-1/2	KB-3528		
		4"	KB-3532		
		4-1/2	KB-3536		

Thick T	Wide W	Long L	Tip Number	Gram Wt.	
		2-1/4	SK- 3817		
		2-5/8	SK- 3821		
		3-1/4	SK- 3825		
3/16"	1"	3-5/8	SK- 3829		
		4-1/8	SK- 3833		
		6-1/8	SK- 3849		
		8-1/4	SK- 4866		
		10-1/4	SK- 4882		
1/4"	1"	12-1/4	SK-48100		
		15-1/4	SK-48122		

PROPOSED knife blank standards based on an industry survey.

Carbide Standards

The woodworking industry can gain seven big advantages by having a carbide standardization program according to one of the best known and most authoritative men in the carbide-woodworking field.

by R. D. BROOKS
Development Engineer
Wood Products Div.
Firth-Sterling Steel & Carbide Corp.

Industrial Standards have played an important role in making the United States the production leader among nations. Without these standards for raw materials, machines, tools and procedures, this nation would be unable to produce such vast quantities of civilian and military goods.

The more progressive a nation may be, the greater the importance and need for standards. One has but to look about him to see hundreds of items which are available at fair prices to the consumer because some individual, commercial group or association, government regulation or consumers group started the agitation for improved, more efficient or less costly products in standard shapes, sizes or quality.

A fact which is often overlooked in any discussion of standards is that few, if any, standards are absolutely final or permanent.

Any standards which are adopted for carbide woodworking tools at this time are certain to be revised to meet the changing conditions within this rapidly growing industry. It is equally certain that no standards can be established unless a start is made. Other facts which should be kept in mind when building a set of standards is the earlier standards can be established for the new industry, the less confusion there will be and the quicker the industry will be stabilized.

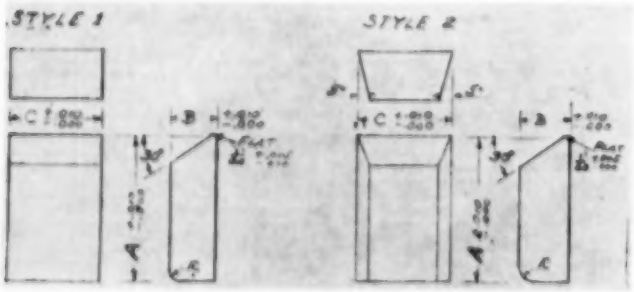
In the establishment of standards in our industry, the participating firms will all make certain concessions as to size, or shape to produce satisfactory, workable standards.

There are many valuable by-products which result from establishment of standards such as: 1.) Uniformity of the finished products; 2.) Ease of repair or replacement of worn or broken parts; 3.) Simplified specifications for parts and completed products. 4.) Improved products resulting in use of better equipment, tooling, molds or dies; 5.) Initial production costs are prorated over a greater volume, resulting in lower manufacturing costs per piece or unit; 6.) Standard parts make possible the use of semi-automatic and automatic equipment for the fabrication of many products; and 7.) Standards encourage distributors to carry more complete stocks for quicker delivery to product fabricators.

These and many other direct and indirect advantages result when standards are established for any manufactured article and its component parts.

The confusion resulting from the wide variety of carbide saw tip shapes and sizes created a need for standards for tooth shapes and sizes. These standards, to be acceptable to the entire industry, would have to meet the requirements of the ultimate users of the saws. They should also provide greater uniformity of size for the saw manufacturer and those who repair them.

SAW TIP standards as developed for the field have promise.



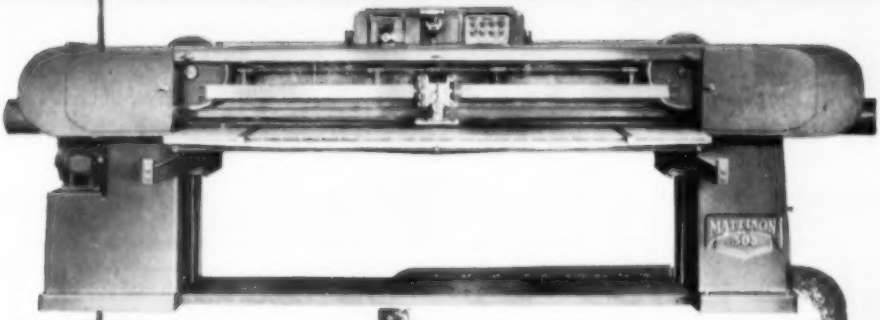
Combined Efforts

In an attempt to solve this problem, Firth Sterling Steel & Carbide Corporation canvassed the carbide saw manufacturers by letter and personal calls. A record was made of shapes and sizes used by a majority

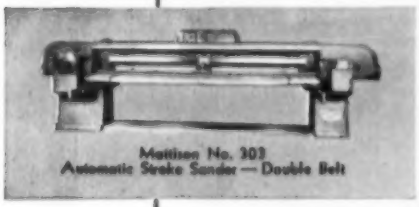
(Continued on page 63)

MATTISON'S NEW

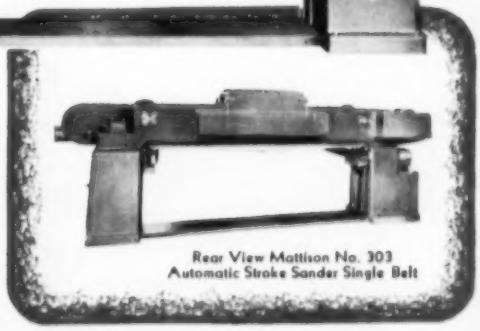
No. 303 Automatic STROKE SANDER



Front View Mattison No. 303
Automatic Stroke Sander — Single Belt



Mattison No. 303
Automatic Stroke Sander — Double Belt



Rear View Mattison No. 303
Automatic Stroke Sander Single Belt

• The Mattison No. 303 Automatic Stroke Sander is the last word in modern engineering. From the standpoint of design — construction — smoothness of operation and appearance, it is in a class by itself. Results that can be expected are faster output, better quality of work, and trouble free operation. These important features are all to your advantage. Hydraulic system for operation of shoe is simple yet positive in action, providing smooth operation of sanding shoe the entire length of stroke. Belt speeds to meet your needs. All controls are within easy reach of operator. The sand belt is completely enclosed at top and both ends for dust control and safety. Belts are easily and quickly changed. Aluminum sanding shoe is mounted on ball bearings for easy operation and control. Massive base and column construction provide solid foundation. The Mattison No .303 Automatic Stroke Sander is recommended as the most efficient method for finish sanding large, flat surfaces such as tops, panels, doors, etc. It provides perfect work on a real production basis. Double-belt model with coarse belt for removing tape and glue, and fine belt for finish sanding, speeds up production by reducing handling time and, in many cases, eliminates drum sander operation.

Send for complete information on the 303, the latest in stroke sanders.

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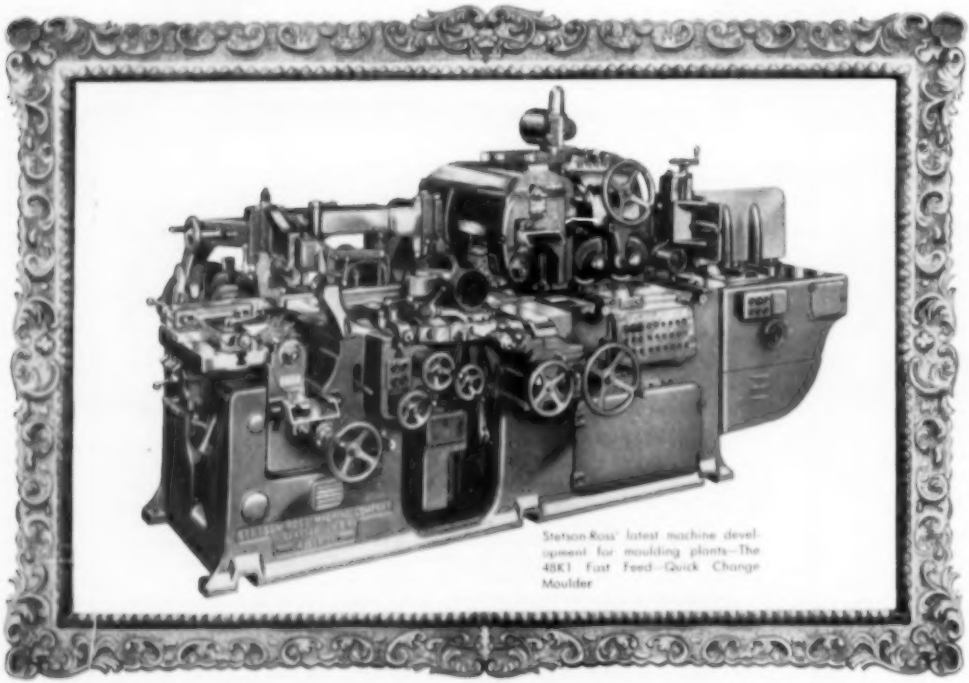
Stetson-Ross 48K1 — another thoroughbred engineered to pay high winnings for mill owners.

Good Breeding Pays

The 8" x 4" 48K1 Moulder is one of the youngest and most promising descendants in a family of machines long noted for their productivity and general excellence of quality. In common with other woodworking machine tools in the Stetson-Ross lineage, this moulder is outstanding in its ability to permit quick pattern changes as well as heavy cuts at fast feed rates.

You will find that such well-proven and familiar Stetson-Ross features as the pre-set "cartridge" cutterhead unit, the push-button controlled motorized hoists for top cutterhead and feed rolls, and the visible sealed-in-oil feedworks are all incorporated in this 129 HP design. An important new machine—the 48K1 merits your consideration.



Stetson-Ross' latest machine development for moulding plants—The 48K1 Fast Feed—Quick Change Moulder

8" x 4" 12-knife 48K1 Moulder—feed speeds to 300 lineal feet per minute. Also available as 5-head machine.

Subject to prior sale, a limited number of these machines are available for prompt delivery. You are invited to write for the 6-page illustrated descriptive folder — which will be mailed to you without obligation.

STETSON–ROSS
MACHINE COMPANY
SEATTLE 4, WASHINGTON

Export Division, 301 Clay St., San Francisco 11, California

Ten Commandments For Successful Glue Mixing

1. Follow the instructions of the manufacturer.
2. Have adequate mixing equipment.
3. Place mixer near area where glue is used.
4. Keep equipment clean and in good working order.
5. Use glue in order of shipment.
6. Weigh all ingredients and make sure none are left out of mix.
7. Use water at room temperature or 70° F.
8. Always add powders to the liquids in the mix.
9. Hold back some of the water if glue mix tends to have lumps. Add this water when smooth mix is obtained.
10. Do not mix more glue than that which can be used during the working life of the glue.

How to Mix Glue Successfully

Proper amounts of glue, catalyst, and extender; proper mixing vessels; and competent personnel are all necessary for successful gluing. Here are ten ways to mix adhesives properly for best results.

By B. H. THIELGES
Mid-west Sales Manager
National Casein Company

Many books have been written on gluing procedure, but detailed instructions always seem to start after the glue supposedly has been mixed. Great care is taken to explain the importance of the right moisture content and the correct surfacing of wood. Hot and cold press techniques and curing schedules are discussed in detail. All of this information is essential to good gluing procedure but the scarcity of information on the actual mixing of glue would lead one to believe that this operation was relatively unimportant.

Of course, the opposite of this is true. Trouble free gluing starts right in the mixer and here incorrect procedure can thwart the efforts of the most skillful glue room crews.

Adequate Equipment Necessary

Most plant owners are justly proud of their up-to-date equipment. Planers, saws, routers, drum sanders and other shaping devices for wood are chosen with care and no expense is too great for this type of equipment. When the glue mixing room is reached, anything goes and the little woman's worn out Mixmaster and the old pail with the hole in the bottom is considered adequate.

For correct glue mixing, good equipment is a must. A well equipped glue room should have an accurate scale, preferably the beam type, an ample supply of containers, and a mechanical mixer in good shape. This mixer should be large enough for the needs of the gluing program in the plant. It should have paddles that revolve as closely as possible to the sides and bottom of the container in which the glue is mixed. These paddles should revolve fast enough to eliminate lumps in the glue mix and thoroughly disperse all of the ingredients into a smooth even flowing liquid.

The glue mixing room should be placed as close as possible to the area where the glue is actually used. Hot and cold running water should be provided with a drain. There should be enough room to store an adequate inventory of glues and there should be enough room for a man to move around with comfort. Be sure there is plenty of light and ventilation.

Importance of Cleanliness

If a room of the type described above has been provided, the cleaning problem should be simple but we would like to emphasize a few important details. Containers in which glue is mixed and machinery should be washed clean of glue before it sets up and hardens. If glue is spilled on the floor, it should be removed immediately to prevent accidents. If two different types of glues must be mixed in the same equipment, the equipment must be cleaned between mixes. Casein and vegetable glues are alkalin and resin glues are acid. The two will not mix and a very little of alkalin glue will ruin an acid glue or vice versa.

Powdered glues should be kept away from moisture in storage or they will harden. Keep catalysts away from liquid resin glues as a very little catalyst will measurably shorten the storage life of the glue.

The Case of Actual Weights Against Measures

Everyone is familiar with the old timer who can actually determine when a glue is correctly mixed by its appearance and feel. The trouble is that we cannot all have this skill and we must use some mechanical means to insure the correct amounts of ingredients being used.

The two methods used are (1) weights, and (2) measures and the argument in favor of one or the other has raged loud and long. To be sure, measuring ingredients is the fastest and easiest but the author does not believe that this method is as dependable as that of weighing powders and liquids. It must be borne in mind that powders have a tendency to pack down or fluff up and a given volume will vary in weight because of this. Containers used for measures become battered or build up with glue and

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(Continued from page 37)

again the weight of this volume will change. Even liquids are not dependable as the volume of this ingredient will change with temperatures.

Given a good dependable scale there will be no argument in your glue room concerning the correct amounts of glue, water, flour, and catalyst in the mix. Be sure to take into account the weight of the container and be sure that the man responsible, understands his scale and can read it.

Leave Glue Formulation to the Manufacturer

Correct glue mixing formulas are established in the laboratories of glue manufacturers by men who know the materials with which they work.

These formulas are the results of many experiments with three objectives: (1) the best glue bond possible with the materials at hand; (2) economy, and; (3) making the mix adaptable for use in the average woodworking plant. Any addition to or subtraction from these formulas by the user probably duplicates an experiment made by the manufacturer which was found unsatisfactory and discarded. More important, these changes can be very costly because of the failure of the glue line in subsequent machining or at the point of use.

The mixing formulas for resin glues, where the catalyst plays such an important part, must be treated with respect. The catalyst which is the setting agent determines the working life of the glue mix and also the time necessary for the glue line to complete its cure. Any change in the amount or type of catalyst may produce undesirable results such as glue setting up on spreader rolls, precure, no cure at all, or acid glue lines which will fail in time.

It is better to be safe than sorry, so be sure to consult the manufacturer of the glue or his representative before making a change in an established glue mixing formula.

Hints To Help You

It is not practical in an article of this type to set down hard and fast rules for the mixing of each kind of glue. Formulas will vary for one particular type because of differences in manufacture. General rules in mixing procedure can be given which should be helpful to the glue room foreman.

Start out by weighing all ingredients, each in its separate container. Check to see that all are present and accounted for. Do not use aluminum containers for casein glues as the glue will pit them and they will become unfit for use.

Always add powders to liquids when putting the ingredients into the mixer. In mixing casein or flour extended resins, hold back on some of the water as a heavier mixture will tend to break up lumps which may form. Of course, the water which has been held back must be added after the flour or powdered glue has been completely disolved.

Do not use water which is too cold because cold water will slow down the dissolving of powders and lumps will probably form. Water at 70° or room temperature will give the best results. Hot water will shorten the working life of casein and resin glues.

Always add catalysts as the last step in mixing resin glues. Ammonia type catalysts if added before the flour make it difficult for the flour to dissolve in extended resin mixes. Make sure that the catalyst is not forgotten.

Extending Resins

When extending resin glues with wheat flour, use low viscosity flours which require less water to give the

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a dependable supplier of

MACHINED WOOD PARTS ?

BRUCE IS EQUIPPED TO SERVE YOU

Modern Woodworking Plants at Memphis and Little Rock have all latest types of equipment for precision production at quantity prices.

Five Bruce Sawmills are strategically located in Arkansas, Mississippi and Alabama to insure a constant, uniform supply of properly seasoned lumber in various species and grades.

25-year Experience assures manufacture according to specifications, and shipment on schedule. Leading users of wood parts throughout the nation can vouch for Bruce quality and service. Free technical and advisory service on request.

Send us your specifications or samples and we'll tell you what we can do for you.

BRUCE

Wood Parts

FURNITURE DIMENSION

E. L. BRUCE CO., 1616 Thomas St., Memphis 1, Tenn.

glue the correct spreading viscosity.

Walnut or pecan shell flours will help prevent resin glue from penetrating the surface of face veneers. These shell flours also require less water in the mix.

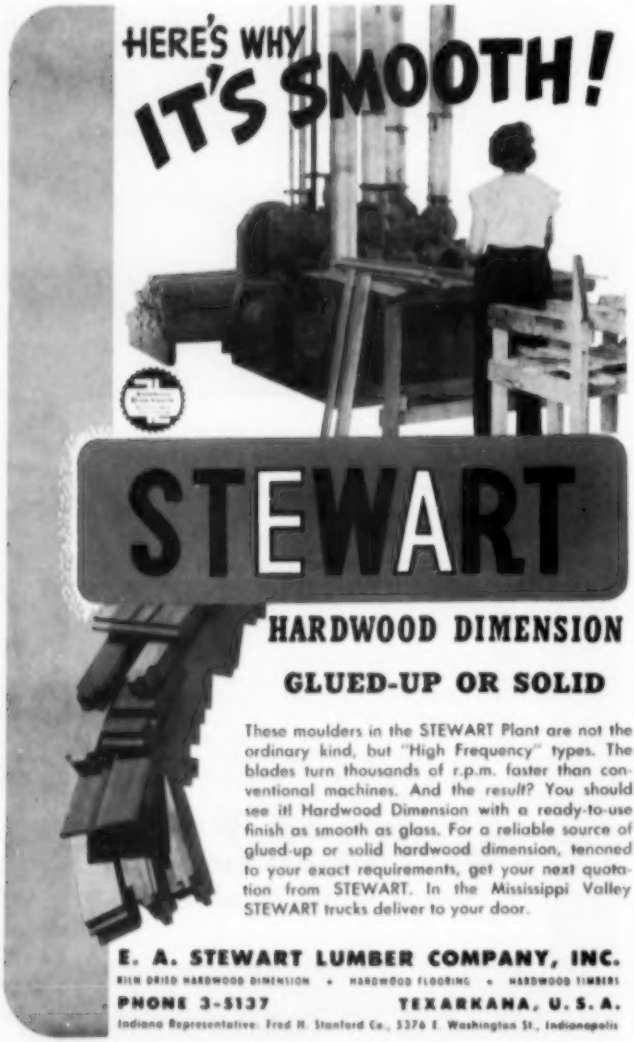
Mix for Use

Mix only enough glue to use during the approved pot life or working life of the glue mix. Glues which become too viscous because the pot life has expired will not wet the surfaces of wood enough for a good bond. During hot weather, the working life becomes shorter and it is necessary to mix glue more often.

If a large inventory of glue is carried, use the glue in order of shipment. Most glues have a definite storage life. Over-aged glues are difficult and sometimes impossible to mix.

Up to this point, we have considered all the mechanics necessary for mixing glue. Let us now consider the human element. There was a time, not long past, when glue mixing was one of the lowest paid and least sought after jobs in a woodworking plant. It was usually given to the least intelligent broom pusher on the payroll. Modern glues and methods have changed this position. In fact, if the man in charge of mixing glue in a large plywood plant has some knowledge of chemistry, he is more apt to be a success in his job.

Whether the plant be large or small, it is a good idea to impress upon the glue mixer the importance of his duties. After all, what good is modern machinery and methods if inefficiency prevails at the source of good gluing—the mixing room.



SALUTING

(Continued from page 21)

ember trail as a graduate assistant at Michigan State College.

Extension forester for Wisconsin, and district forester for Wisconsin's Conservation Department preceeded his job at Fairchild Aircraft's Burlington, N. C. plant as wood processing engineer. He became chief procurement inspector for the Army Air Force in New York during the war and joined the U.S. Forest Service at the Northeastern Experiment Station, Upper Darby, Pennsylvania after the war.

Active in Forest Products Research Society work, Roy helped form the Northeast section and served as its regional board member until he moved to North Carolina. Other organization activities include: chairman, Forest Products Division, Society of American Foresters, and secretary of the Southeastern Dry Kiln Club.

As president of FPRS, Roy brings with him plenty of FPRS experience as well as training in education, industry, and government aspects of the forest products field.

Congratulations are in order to these three men, and the industry is to be congratulated also for placing men of this caliber in these positions.

WOODICTIONARY

MOULDER

A machine for contouring and shaping four sides of a piece of wood simultaneously.

(Dwg. So. Pine Assoc.)

new wonder wood

of Associated Plywood Mills

Here is plywood the beauty of which will amaze and delight you. For here is the spiraled grain of ocean waves; of tide-prints in the sand; of the lure and romance of ocean beaches and wind-swept seas.

Here is the durability and practicability of plywood, surfaced with a modern decorator's touch.

Not many may have Sea Swirl, for the supply is limited. But for the fortunate few there will be home and office interiors of great charm. Sea Swirl is available at APMI Sales Warehouses exclusively. Call your nearest APMI warehouse for information.

Associated Plywood Mills, Inc.

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PLYWOOD MILLS at Eugene and Willamina, Oregon

APMI Sales Warehouses:

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4814 Bengal St., Dallas
4001 Coyle St., Houston
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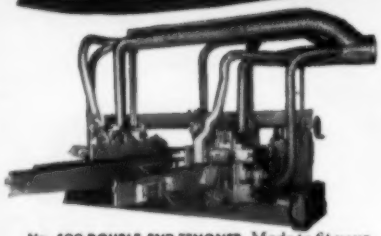
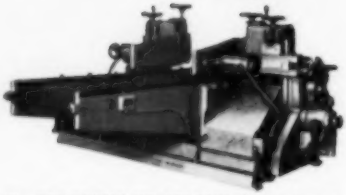
Eugene, Oregon

You Get Time and Motion Efficiency with

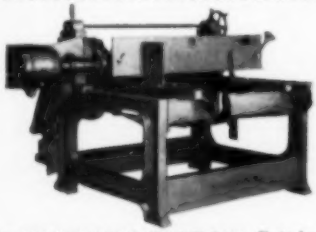


No. 400 DOUBLE-END TENONER. Made to fit your requirements in sizes up to 20'. Will square-cut up to 96" ahead of trim saws. Many accessories to increase usefulness. *Ask for Bulletin No. 400.*



No. 300 DOUBLE CUT-OFF SAW. Accurate production at high rates of speed. Labor saving attachments such as cope motors, dado arbors and other devices are available for specific needs. *Ask for Bulletin No. 300.*

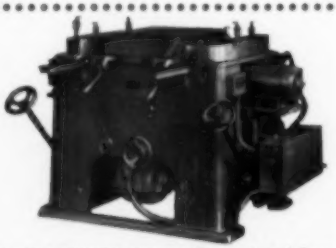
No. 442-MT COMBINATION SAW. Versatile machine for ripping, cross cutting, grooving, dadoing, beveling, mitering. Cuts up to 48" wide and rips up to 50" wide. Easily handles large stock. *Ask for Bulletin No. 442-MT.*



No. 435-H MULTIPLE CUT-OFF SAW. Cuts long boards into short pieces . . . will square up any size sheet . . . and will cut any number of grooves. It's an excellent plywood sizer. *Ask for Bulletin No. 435-H.*

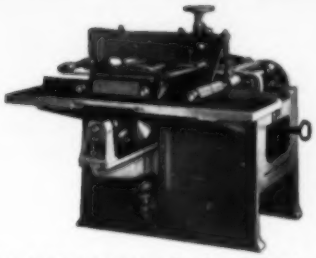
VERTICAL BAND RESAW

Eight feed rolls eliminate "stock wobble". Sizes 48" to 60". Variable feed drive; 100% ball and roller bearings. 54" Twin Band Resaw. Combination band rip and resaw. *Ask for Resaw Bulletin.*

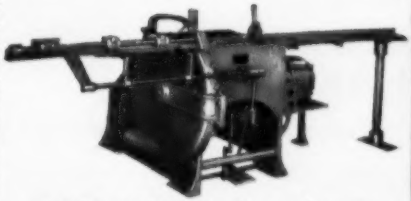


No. 326 MATCHER-JOINTER. For sash and door, furniture and box factories—as well as many special uses. Adaptable for jointing hogshead staves. Unequalled for "T" and "G" work. *Ask for Bulletin No. 326.*

Mereen-Johnson MACHINES



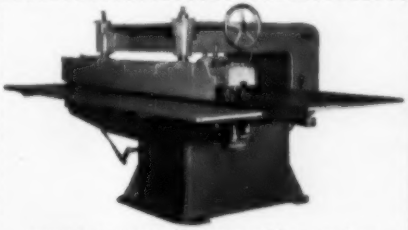
No. 441 GANG RIP SAW. For fast production on the most difficult gang ripping jobs. Six power driven feed rolls . . . 12" or 19" saw space . . . up to 125 HP . . . variable feed drive up to 300 ft. per minute. *Ask for Bulletin No. 441.*



No. 477 CUT-OFF SAW. Capacity equals two or three swing, straight line or roller carriage cut-off saws—depending on the type and condition of the stock. Excellent for box work. *Ask for Bulletin No. 477.*

VENEER JOINTER

Traveling head principle eliminates shifting. No chain feed—no "stock wobble". Perfectly joints bundles of veneer up to four inches thick. Sizes from 90" to 212". *Ask for the Jointer Bulletin.*



VENEER SPLICER. Makes precision tapeless joints. Adjusts itself automatically for varying thickness of veneer normally encountered. Welded steel frame with 49" throat clearance at right. *Ask for Bulletin No. 50.*

The experience—the equipment—the manpower for producing *Precision Machines.*

Mereen-Johnson MACHINE COMPANY

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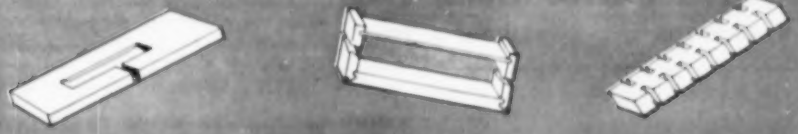


Grinding Wheel Care

Part Two of the article on getting the most from your grinding wheels.

Rules for proper care are:

Mounting.—Before mounting, wheels should be closely inspected for any possible defects or cracks. They should fit freely on the spindle and never be forced on. The spindle nut should be tightened only enough to hold the wheel firmly; otherwise the clamping strain is liable to damage the wheel. All wheels should be mounted between flanges of equal size with wheel washers or blotters next to the wheel. The flanges should conform to accepted safety standards and be so designed that a full area of contact surface bears against the wheel and blotter with equal pressure.

Wheel speeds.—Wheels should not be operated above their recommended speed limits, and sufficient supervisory attention should be given to machines and wheels to see that safe operating speeds are not exceeded. As a straight wheel wears down and its surface speed decreases, its production capacity also decreases and wheel wear is increased. When the surface speed has dropped to approximately seventy-five percent of that desired, the wheel may be used on another, faster machine which is running at the proper speed for a wheel of this smaller size. The surface speed is based on Surface Feet Per Minute converted from Revolutions Per Minute by the following formulae:

$$SFPM = \frac{\text{Dia. in inches} \times RPM}{4} \quad \text{or}$$

$$RPM = \frac{4 \times SFPM}{D} \quad \text{(Approx.)}$$

Balance.—New wheels are reasonably concentric with the arbor hole, but established procedure should be followed in checking wheels for being out of balance and in properly balancing them. Lack of care in proper mounting may often result in wheels being out of balance.

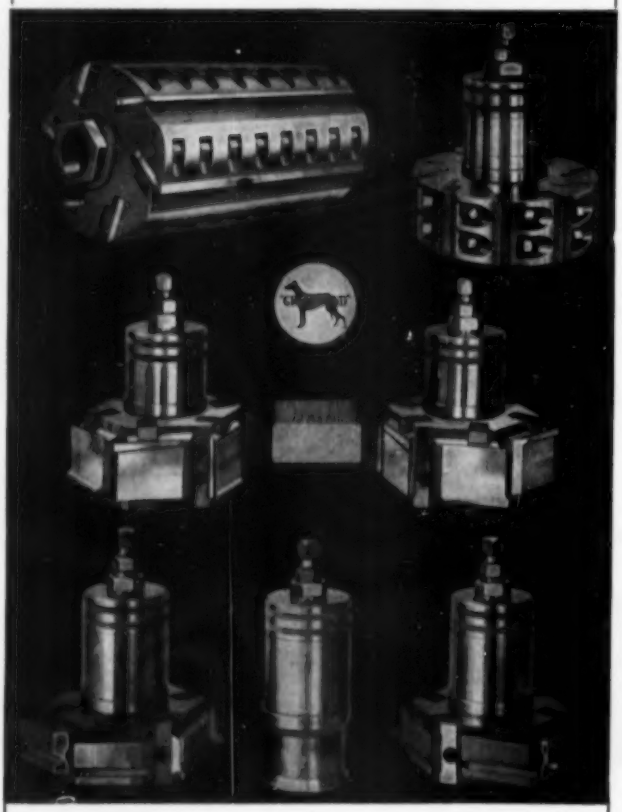
Truing and dressing.—Wheels should be kept running true. Wheels should *always* be kept properly dressed. Glazed and loaded wheels do not produce efficiently and tend to overheat the work. The dressing method should be selected according to the wheel and its use. Truing and dressing should not be done at higher than operating speeds. Wheels may be dressed either wet or dry, according to whether the grinding is done wet or dry.

Coolants.—Where coolants are used they should be kept clean and free of chips. The wheel should not be allowed to remain partly immersed in the coolant as the wheel will become unbalanced due to the absorption of moisture.

Diamond wheels.—Diamond wheels are expensive and should not be used indiscriminately in grinding. They are used primarily on carbide tools and their use for other purposes should be strictly supervised.

Summary.—For proper selection and good care and maintenance practices follow the suggestions of the known grinding wheel manufacturers. Their marking symbols, established by Standardization Committees, will help in the selection of the right wheel which not only will give the best results but also will insure most economical grinding operation.

CUTTER HEADS - - - For Every Possible Requirement



Jones & Orth Cutter Head Co.

SEATTLE 14, WASHINGTON — MEMPHIS 3, TENN.

PRODUCTION UP-PAYROLL DOWN with WHELAND EQUIPMENT

GET ALL THE LUMBER FROM YOUR LOGS AND USE

LESS MEN

TO DO IT

A sawmill's profit depends mainly on the amount and grade of lumber it can cut with a minimum of labor. Proven, dependable Wheland equipment means extra profits from savings in labor costs, less down time, better sawn lumber and the advantage of knowing production schedules will be met on time.

Wheland has been building the best in sawmill machinery for over eighty years. You can't buy better equipment for dependability, speed and accuracy.

Shown above, Wheland equipment at the J. P. Hamer Lumber Company Mill at Kenova, West Virginia. Seen here is the ideal combination for making money in the sawmill business. Wheland Log Deck Equipment loads and turns the logs on the Wheland Carriage at fastest production speed. Air operated dogs and tapers on the carriage assure absolute accuracy in each piece of lumber. Sawyer and block setter handle all controls. Kerf-saving Wheland Band Mill completes the set-up.

WRITE TODAY for full information on any piece of Wheland Sawmill Machinery. Wheland also offers engineering advice and a Sawmill Planning Service based on more than eighty years' experience. We will be glad to answer any questions and send you our latest bulletins upon request.

The WHELAND COMPANY

COMPLETE SAWMILLS AND AUXILIARY MACHINERY • CIRCULAR SAWMILLS—HEAVY, PORTABLE BAND SAWMILLS • EDGERS AND TRIMMERS • TRANSMISSION AND CONVEYOR MACHINERY

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Industrial Oak • • • Wagon Oak

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Manufacturers of Quality Products

Since 1889

Call our nearest representative or address the home office at

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PATENT DIGEST (Continued from page 18)

cylinder having radial hexagonal recesses arranged spirally for use with planers or jointers.

Flat Stock Handling

H. A. Smyth (to Washington Veneer Co.). U.S. 2,549,754, April 17. Vacuum hold-down for machines operating on flat wood stock.

Sap Stain

L. R. Bacon and D. B. Conklin (to Wyandotte Chemical Corp.). U.S. 2,549,358, April 17. Composition for inhibiting sap stain and mold growth in green wood comprising a mixture of borax, modified soda, sodium pentachlorophenate and a mixture of primary alkylamine salts.

Chip Removal

G. L. Reasor. U.S. 2,549,522, April 17. Removing matted wood chips after resin extraction by loosening with hot dilute acid.

Molded Articles

S. O. Barnstead. U.S. 2,549,-563, April 17. Impregnating sawdust with sodium silicate, drying, applying a bonding agent, and molding.

Plywood Grooving

G. H. Norquist. U.S. 2,549,631, April 17. Grooving wheel designed to cut grooves in laminated plywood.

Adhesives

A. D. MacDonald and S. L. Sprague (to B. B. Chemical Co.). U.S. 2,550,534, May 1. Adhesive comprising a blend of polychloroprene latex, an alkali caseinate, and a resin.

Cork Substitute

R. S. Owens. U.S. 2,549,849, April 24. Reducing the outer bark of paper birch while preserving cellular structure, adding a binder, and baking at a temperature below destructive distillation until the mixture becomes cork-like.

Laminated Ski

H. Chorney (to United Aircraft Corp.). U.S. 2,550,002, April 24. Laminated ski having a core of low density, high density material at opposite ends and high density side strips, a foot-pad, and a layer of resilient material between the pad and the adjacent facing sheet.

Construction Board

E. Eger (to United States Rubber Co.). U.S. 2,550,143, April 24. Fibrous board comprising a mass of fibers bonded with butadiene-styrene copolymer mixed with acrylonitrile-styrene copolymer, vulcanizing ingredients, and a resorcinol-formaldehyde resin.

Grinding Machine

O. Smid (to Ostravske Chemicke Zavody). U.S. 2,550,169, April 24. Mill for fine grinding of wood chips.

Shuffleboard Wax

W. G. Young, Sr. U.S. 2,550,-631, April 24. Nut shell particles impregnated with wax.

Building Structure

C. J. St. Vincent. U.S. 2,550,-553, May 1. Wall structure comprising logs arranged vertically in juxtaposition through vertical grooves.

WOODICTIONARY

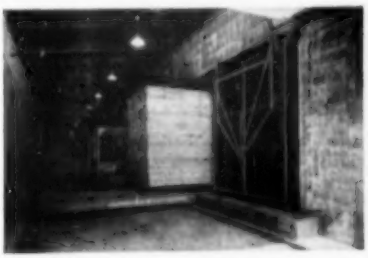
CARRIAGE RIDER

Men who ride the saw carriage to set the dogs or set feedworks or both.

(Dwg. So. Pine Assoc.)

● With today's net profit on most unit sales at an all time low, every woodworking operator knows it's more necessary than ever to increase production and eliminate waste and green lumber rejects.

Protect YOUR Profits! Rely on Standard dry kiln internal fan construction and automatic reversible cross-recirculation for faster, more uniform drying under exact conditions throughout every kiln load. *Rely on Standard to cut operating costs!* Whether you need a single unit, a full battery of kilns, or need to remodel your old natural draft installations for maximum profit-building results, get the facts . . . *YOU'LL* want Standard too!



Sprague and Carleton, Inc., manufacturers of solid maple furniture, relies on Standard Dry Kiln's accurate control equipment to maintain exact heat, humidity and ventilation conditions within the kilns . . . one of the reasons the firm's name is synonymous with quality

WE SELL THE FIRST *Standard...*
Performance SELLS THE REPEATS!

Write for illustrated Standard Catalog

Manufacturers of Internal Fan Kilns

STANDARD
Engineers and Manufacturers Since 1907
DRY KILN COMPANY

P. O. BOX 5708 • INDIANAPOLIS, INDIANA

YOU CAN'T BEAT THIS 2-MAN DISSTON FOR THE BIGGEST, TOUGHEST JOBS!

The Disston Two-Man Extra Duty Chain Saw is the favorite of professional loggers the world over. No wonder! That famous Mercury engine packs 12 horses —power enough for the most demanding needs. The clean-cutting Disston-steel chain travels around the rail at a rate of 1,200 feet per minute. Where production is measured in hundreds of thousands of board feet a day, the Disston is continually on the job, performing quicker, better, more profitably—with minimum time out for maintenance and repairs.

HERE'S EVERYTHING YOU WANT IN A CHAIN SAW...

Power. 2 cylinder, 2 cycle, air-cooled Mercury gasoline engine develops 12 hp at 4,000 rpm. Pinion and bevel gear transmission running in oil. Sawing mechanism rotates in any direction, engine remains upright. Dry disc clutch transmits full power to the drive sprocket.

Durability. Shockproof transmission housing. Cradle-balanced tailstock with strong abutment for inverted bucking. Disston-steel guide rail, reversible end for end, top for bottom; hardened and tempered Disston-steel cutting chain. Built-in lubricator automatically oils chain.

Ease of Operation. All controls conveniently located in operating handles. Hand-controlled positive clutch. Rail and tailstock easily detached. Interchangeable rail lengths of 2, 3, 4, 5, 6 and 7 feet. Magnapull self-rewinding starter.

Real Value. Only the best in design and materials will make your investment in a power saw pay off! You get the best in a power saw made with all the skill of America's oldest saw manufacturer, with all that the best entails: low maintenance, long-range economy.

Don't forget the equally tough little brother of the big Two-Man—the popular Disston One-Man Saw—light in weight but with plenty of power for most woodcutting jobs.

A tip for present Disston Saw owners:

Follow the simple FIGHT WASTE preventive maintenance instructions which are available to you free of charge. Send for the valuable check-up charts, the illustrated maintenance folder, the detailed handbooks. Above all, rely on the services of your Disston Dealer.

Call your Disston Dealer today for a demonstration.

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In Canada, write:
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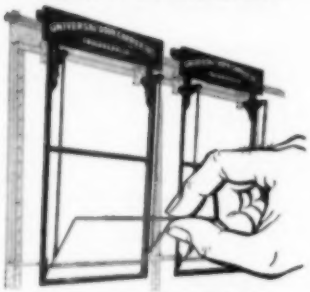
Toronto 3, Ont.

Handle Dry Kiln Doors SINGLE-HANDED?



***You can do it with The Universal* DOOR CARRIER**

One man—with one hand—and a Universal Carrier can open or close a kiln *in a few seconds.* And the carrier makes your doors last longer!—by gentler handling, without twist or strain. Automatic locking gives you good tight closures every time.

Write for further facts!

***Universal* DOOR CARRIER, INC.**
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Indianapolis 2, Ind.

WOOD PRODUCTS COMPLETELY MACHINED

SOUTHERN HARDWOOD—YELLOW PINE AND CYPRESS LUMBER

FLOORING

HANDLES & DOWELS

Your Inquiries Invited

ANDERSON-TULLY COMPANY
MEMPHIS 10, TENN.

A Practical Solution for Your WOOD'S OFFAL Problem . . .

The disposal of tops, limbs and other woods offal has always been a problem. Leaving them in the woods or burning them presents a real fire hazard. Today you can solve this problem with a Fitchburg Chipper.

You can spread the chips in the woods, or you can make it a profitable operation. Listed at the right are ways that you can use or dispose of the chips at a profit.

There's a Fitchburg Portable Chipper that will fit your needs for use with trailers, tractors, truck and jeep mounts. We welcome your inquiries. To help us both analyze your problem, will you please send us complete information covering:

1. Conditions under which machine is to operate.
2. Method of feeding especially on material too heavy to handle by hand.
3. Use to be made of chips.
4. Capacity desired.
5. A general story of what you desire to accomplish by use of of the Fitchburg Chipper.

WOOD Chips Are Valuable . . .

- ***For making mulch for orchards, berry bushes, shrubbery, etc. A Maine apple grower reports 60% increase in size of apples where wood mulch was used.***
- ***For extra fuel supply for your boilers supplementing present supply and eliminating the purchase of extra fuel.***
- **For certain pulp and paper processes.**
- **For use as a soil conditioner in building up worn out soils.**
- **For use in the making of wood molasses.**
- **For cattle bedding, chicken litter and similar uses.**
- **For production of hardwood ashes for chemical companies.**
- **For production of hardboard where sufficient waste is not available.**
- **There's a market for wood chips around your operation. Why not study this problem? There's extra profit in Fitchburg wood chips.**

Manufactured by

Fitchburg Engineering Corporation

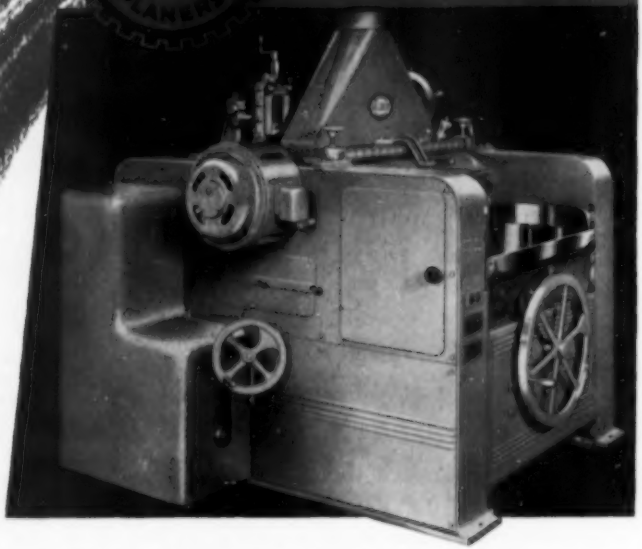
Fitchburg, Massachusetts U. S. A.

THE BUSS 4-L

Greatest PRODUCER of PRECISION PLANING

OF ALL MEDIUM-SIZE, LOWER-PRICED PLANERS!

BUSS



IN no other planer in the medium-size, lower-price range can you get INSTANTANEOUS CONTROL OF LOWER ROLLS, INSTANTANEOUS MICROMETER CONTROL OF PRESSURE BAR, the SHEARING BAR, VARIABLE SPEED and the many other BUSS exclusive features that save time in set-up and changeover, provide maximum production and finest quality finish planing. If your production requirements are within the capacity of the 4-L (24", 26" or 30" x 8") a simple comparison will quickly convince you it is the finest, most advantageous planer you could possibly buy. Write for Bulletin 54 for complete details.

The BUSS line contains a type and size for every production set-up. Singles: — Small, Medium and Large; Double Surfacers and the No. 55 for surfacing rough lumber. Write for bulletins or consultation on any planing problems.

PLANER HINTS

STOCK TWISTS IN MACHINE

Pressure bar, lower rolls or upper surface rolls may be locked, or uneven tension on latter. BUSS instantaneous micrometerols practically eliminate this trouble. Write for further details.

BUSS MACHINE WORKS

PLANER SPECIALISTS EXCLUSIVELY

244 EIGHTH ST. HOLLAND, MICHIGAN

FOREST PRODUCTS RESEARCH SOCIETY

F.P.R.S. Monthly Bulletin

Research • *Development* • *Production* • *Utilization* • *Distribution*

by FRANK J. ROVSEK, Executive Secretary, P. O. Box X 2010, UNIV. STA., MADISON 5, WISC., JULY, 1951

12 FPRS Sections to Serve 2200 Members

IN A MOVE TO IMPROVE SERVICE by refunding Section administrative dues, increase membership, and circulate meetings, the Section Officers' Council and Executive Board adopted a workable system of boundaries at their meeting in Philadelphia. Principal points include: Plan for future Ohio Valley Section with northern boundary line drawn north of Indianapolis-Columbus . . . creation of three Territories in sparsely membered areas, each to be completely serviced by adjacent Sections, e.g., Dakotas by Upper Mississippi, Plains by Midwest, Rockies by Northern California . . . shift of Missouri from Deep South to Midwest. Affiliation of two areas, Michigan peninsula, and Alabama will be determined during the year by membership poll. Questions—should former go with Upper Mississippi or Great Lakes? Should latter be divided, western portion to Deep South, eastern to present Section? With general accord on scope of operations, FPRS membership should begin to sense improved service at Fall Meetings .

AFA-ECA "Timber Industry Team"

The American Forestry Association, assisting the Economic Cooperation Administration, since June 1 has been conducting some 75 European wood-using leaders through U.S. industry. Dr. George Garratt, Yale, is project director. Working with him are such FPRS men as George M. Hunt, retired U.S. Forest Products Lab director, professors Fred Dickinson and E. S. Johnson, of Yale, and North Carolina State.

Two of the eight groups making up the "Timber Industry Team" will concentrate on furniture—mass production and small plants. Two groups

(Continued on page 54)

COMING EVENTS

July 20, Madison, Wisc.—Midwest Section Summer Meeting featuring Harold E. Holman, Ass't. Chf., Lumber and Wood Products Division, NPA. "WHAT IS OUR JOB IN THE NATIONAL DEFENSE." FPL tour and consultations. Lunch at Blackhawk Country Club. Ladies program is also scheduled. Be on hand at 9:30 a.m. CST.

* * *

June, 1952, Milwaukee, Wis.—6th Annual FPRS National Meeting. The Executive Board, in session at Philadelphia, voted to hold a 3-day Technical Meeting with possibly a 4th day devoted to plant visits, in this city famed for "Gemuetlichkeit" or "good living".

Wood Industry Executives Discuss Need For Training Technical Personnel

What do the forest products industries offer in the way of *training* men for technical assignments in the wood industries? What must they do to provide *equal opportunity* to that offered by other and technically more advanced industries? What are *expectations*, as well as opportunities for college trained men? These and similar vital questions were threshed out in the Session on Training at the FPRS national meeting in May.

Papers were presented by C. D. Dosker, President of Gamble Bros.; Clyne Crawford, President, Crawford Furniture; G. Maurice Hill, Mgr. Production Drexel Furniture; Geo. L. Drake, Administrative V. P., Simpson Logging Co.; Dr. F. H. Kaufert, Dir. of Minnesota School of Forestry; and Dr. E. S. Harrar, School of Forestry, Duke. Others on the panel discussion included Dr. Geo. Garratt, Yale; R. C. Fraunberger, V. P. the Philco Corp. and R. H. Hertzler, U.S. Forest Service.

NOTE—the FPRS National Office has organized employment data on some 25 recent college graduates in wood technology who are now seeking jobs in industry. If you have a job opening, or know of one, please advise the Executive Secretary, Box 2010, University Station, Madison 5, Wis., and he will be glad to correspond further with you. Please indicate general qualifications desired.

Dosker Stresses Need

Wood, Dosker stated, was second only to steel in the World War II economy. For this reason it is vital that every effort be made to obtain maximum utilization from every tree converted.

Yield Must Be Increased

In his opinion, Mr. Dosker visualized the yield in terms of end products as increased by a minimum of 10 percent. This will require technical assistance . . . training hundreds

(Continued on page 52)

Technical Training

(Continued from page 51)

of *men who can think of trees in terms of end products*. This means classifying trees first for primary conversion. Shall they go into veneer? lumber? poles? ties? pulpwood? The ability to so classify requires intimate knowledge of end products, markets and demands, and of the industry converting the logs . . . hardly a training job to be accomplished in a few months or even years.

The first step is to convince the logger and timber producer that there is money to be earned by good practices. Whether tree length logs are bucked at skidway or mill they should be done under supervision skilled in end-use. Next comes primary conversion, whether logs are to be broken down by either sawmill or veneer mill. In the case of sawing every effort must be made to obtain the highest possible grade out-turn. By care in sawing, edging, and trimming much can be done to avoid manufacturing defects.

One Way To Save 5 Percent

There is a great need for an inexpensive band mill that can reduce a log into boards with less kerf than required by circular saw. One-half of the 10 percent or 5 percent, saving Mr. Dosker recommended could be accomplished through improved sawing methods alone.

The problem of better manufacturing is not confined to lumber. In veneer mills there is the problem of accurate and smooth cutting. Here, again, is opportunity through improved mechanical methods for getting more veneer from each bolt. Stop and figure what it would mean in terms of productive footage if another inch or two could be removed from the diameter of each veneer log.

After these operations, still more waste. Millions of feet of lumber and veneer wasted each year through careless seasoning and drying practices.

60 Percent Use; 40 Percent Waste

As the forest products move into secondary conversion there is the three fold problem of material, men, machines. Many plants obtain but little better than 50 percent utility from rough lumber they convert, due to the use of wrong grades or bad cutting. If a plant converting 100,000 bd ft a month could increase yield from existing 60 percent to 65 percent—in cold dollars, this would amount to $1600 a month. How many plants could not afford a specially trained technician to supervise cutting at this savings?

Where do you get people who know the problem of lumber conversion? You train them. Mr. Dosker closed by stating that the need for technically trained people in event of war will far exceed available manpower.

Hill Presents Plan

As a follow-up to Mr. Dosker's outline of the need, G. Maurice Hill presented a carefully organized plan used by his company in orienting and training new employees, supervisory and future management personnel. For each classification, a concise outline of the steps involved was described. For example, under Technical Skills, major topics for training discussion include: Yard, Rough Machine, Finish Machine, Finishing, Rubbing, Shipping, Carving Veneer, and Inspection Groups, with further breakdown of each.

"At the end of our initial survey we were of the opinion that the furniture industry was at least a full generation behind industrial development and organization in metals, chemicals, textiles and other fields," Hill stated.

Furniture Needs

Crawford summed up his industry's requirements for college-trained men as men with: (1) a critical and analytical outlook; (2) familiarity with research and academic knowledge of principle furniture problems; (3) ability to deal intelligently with people.

"The furniture industry is made up of smaller corporations than some industries. We cannot afford the same degree of specialization. Our supervisors must have well-balanced and versatile backgrounds," he said.

The college requirements for the primary wood industries were offered by Geo. L. Drake. He emphasized that young men preparing for the forest products industry should attempt to get the maximum of practical experience during college years. They should have an interest in the future of private industry; the ability to get along; ability for expression and analysis with a knowledge of where to obtain answers; a sound foundation in physical laws and nature of wood; and a knowlege of cost control and statistics.

Mr. Drake cautioned that "technical knowledge alone is not enough—with it must go common sense, faith in your fellow man."

Need For Merchandising Study

Dr. Kaufert outlined the work being done today on "Undergraduate Training." He emphasized one weakness—preparation for sales and development work in the field of building products merchandising. He indicated that it was not practical in under-graduate work to train specialists in such fields as preservation, plywood, etc. Schools attempting to do so run the risk of emphasizing vocational training above college level work.

Raise Degree Requirements

Dr. Harrar got down to cases in describing the function of Graduate Training to provide the greater specialization referred to by Dr. Kaufert. He stressed the need for raising the level of wood technology curricula to include: quantitative needs for, and inclusion of advanced instruction in mathematics, chemistry, physics; and selected courses in mechanical and industrial engineering, electronics, time and motion studies, and technical writing.

Note: Above papers available through FPRS office at 25¢ each or 75¢ the complete set of five.

NLMA Announces Winners

Scholarship awards of $400 each were granted in April to four outstanding forestry school graduates, majoring in wood utilization according to R. A. Colgan, Exec. V. P. of National Lumber Manufacturers Association.

The award winners, who will receive ten weeks of summer training in the Timber Engineering Company Research Laboratory, Washington, D.C. are: John Zerbe—Pennsylvania State College. Aldos Barefoot—University of North Carolina, Chapel Hill. Dan Remington—University of Minnesota, Minneapolis. Richard Pentoney—New York State College, Syracuse.

The purpose of these yearly scholarships is to encourage more of our technically minded forestry school students to specialize for growing opportunities in private wood industries. Under the guidance of TECO's laboratory technicians these men will work on assignments selected to conform with their particular aptitudes.

Research in forest products probably requires a greater integration of scientific skills than any other recognized field. Consequently, these young men must learn to become experts on a chosen subject, whether it be wood preservation, adhesives, finishes, electronics, chemistry, or physics—to name but a few.

FPRS *Forum*

The FORUM is intended to serve as a medium for open discussion by all F.P.R.S. members, bringing practical answers to specific problems. Questions or contributions should be directed to the Executive Secretary.

THE PROBLEM: What precautions will minimize seasoning defects in the kiln drying of green oak lumber?

The Answer:

by O. W. TORGESON, ***Technologist***
U. S. Forest Products Laboratory, Forest Service
U. S. Department of Agriculture

Oak, when kiln dried green from the saw, is particularly susceptible to surface checking and honeycombing. The initial relative humidity must be high to minimize surface checking and early temperatures must be low to avoid honeycombing. To minimize the danger of honeycombing, as well as to increase the kiln output capacity, oak is very commonly air dried before it is kiln dried. Surface checking during air drying, however, is often severe, and could be prevented in the kiln by proper relative humidity conditions. Another advantage of kiln drying green from the saw is the shorter over-all drying time, and it is usually for this reason that requests are made for information on this subject.

Certain fundamentals in the drying of wood have been studied, and the acquired information has been used in formulating schedules that minimize kiln-drying defects. These schedules are given in a recent publication. U. S. Forest Products Laboratory Report No. D1791, "Schedules for the Kiln Drying of Wood." In general, the schedules given for oak are intended to be sufficiently conservative for quality drying, and, if desired, they can be made somewhat more severe for oak whose use requirements are not particularly exacting. The problem of selecting an optimum schedule for some specific use, however, is complicated by the many variables that can influence the results. For example, the seasoning characteristics of the many oak vary considerably, with the northern highland oaks being considered the easiest and the southern swamp oaks the hardest to dry. Furthermore, there are often considerable differences between trees in the same area; even differences between boards from the same trees have been noted. Another variable is the difference in the abilities of kilns and kiln operators to maintain the scheduled drying conditions and to obtain uniformity throughout the kiln charge.

For those operators who have had little or no experience in the kiln drying of oak, the following information regarding the limitations necessary during the early stages of drying should be helpful in avoiding the disastrous results that sometimes occur in this refractory species when kiln dried green from the saw under improper drying conditions.

Drying Stresses

In drying green wood, the surface fibers are first in tension and the interior fibers are in compression because the surface fibers dry first and tend to shrink but are prevented from doing so by the wetter interior wood. The shell thus becomes stretched and set in an expanded condition, while the core is compressed and possibly, to some degree, set in this condition. As drying continues the interior wood dries below a moisture content of 30 percent (the fiber saturation point of wood) and starts to shrink, thus causing a gradual reversal of stresses, from tension to compression in the shell and from compression to tension in the core.

Surface Checking

Surface checks will occur during the initial stage of drying if the strength of the wood in tension perpendicular to the grain is exceeded. For this reason, the initial relative humidity should be high so that the surface fibers will not become excessively dry.

For best results with average oak the initial relative humidity should be 85 to 87 percent for 4/4, 5/4 and 6/4, and 90 percent for 8/4 stock. Relative humidities of 80 to 82 percent for lumber up to 6/4 inclusive, will result in some checking, but many boards will still remain sound. Reversal of stresses usually takes place at a moisture content of approximately 35 to 45 percent, as indicated by the fact that surface checks start to close at about this stage of drying. The

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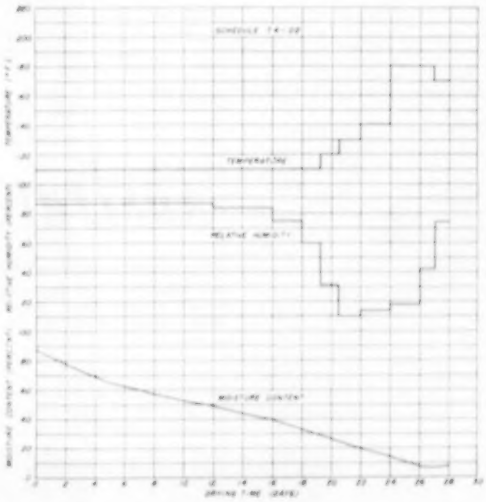

FIGURE 1.—DRYING time data for 4/4 northern red oak when dried under kiln schedule T4-D2 (Forest Products Laboratory Report No. D1791). The time shown is that for a single 4-foot-wide pile in a small fan kiln that provided an air circulation of about 200 ft. per minute through the load.

(Continued from page 53)

Kiln-Drying Green Oak Lumber

greatest danger of surface checking has then been passed, and thereafter the relative humidity can be lowered more rapidly to the final setting without much danger from further surface checking. A very general guide is to start the changes in relative humidity after the wood has lost about 1/3 of its original green moisture content and then to reach the final desired relative humidity by the time the wood has lost the second 1/3 of its water content.

Honeycombing

Honeycombing (open checks in the interior of the wood) may be formed by end checks or surface checks progressing inwardly and opening up in the interior as they close on the surface, or they may be strictly interior failures caused by tension stresses in excess of the strength of wood weakened by excessively high temperatures. The greatest weakening effect occurs while the wood is wet, and then gradually such effects become of little importance as the wood dries to a moisture content below 30 percent, the fiber saturation point of wood. For most oaks, it has been found safe to use an initial temperature of 110° F. For highland stock 115° F. is not considered excessive, but temperatures much in excess of this may lead to trouble. It has been found also that it is advisable to maintain the initial temperature until the moisture content reaches 30 percent. Gradual changes can then be made as drying continues to a moisture content of 15 percent, at which time it becomes safe to increase the temperature to a final temperature of 180° F. for 4/4, 5/4, and 6/4, and to 160° F. for 8/4 stock if desired. Because of longer drying periods and the greater possibility of high-moisture-content cores, a more conservative final temperature is recommended for the thicker stock.

Southern Swamp Oaks

The southern swamp oaks, especially overcup oak from lowland areas, are very difficult to dry without an excessive amount of seasoning defects. No kiln schedule has been found that is satisfactory for the drying of the thick stock, and even 4/4 stock causes considerable trouble. Low-temperature drying is particularly necessary for such oak, and for that reason thorough air drying before final drying in the kiln often produces the best results. In air drying, good protection from sun and rain are essential to prevent excessive checking. Proper piling methods for air drying are illustrated and described in Forest Products Laboratory Report No. R1657.

Use of Schedules

Figure 1 shows the kiln-drying data for a kiln charge of 4/4 northern red oak as dried in a small experimental-type kiln. The width of the load was 4 feet, and the air velocity was about 200 feet per minute through the load. The temperatures and relative humidities used were those of schedule T4-D2 in Forest Products Laboratory Report No. D1791. The rather long drying period of 28 days was due to the high initial moisture content of the stock and to the facts that (1) the initial drying conditions were sufficiently mild to prevent practically all surface checking, and (2) the final drying, equalizing, and conditioning were prolonged sufficiently to give very good uniformity of moisture content and relief of case-hardening stresses.

The somewhat more severe schedules, T4-E2 or T4-D3, can be used to decrease drying time, but a small increase in the amount of checking may occur. Even more severe humidity schedules can be tried, but this should be done only after one has had previous experience with the type of oak to be dried and only when some closed checks are not particularly detrimental to the product for which the oak is to be used. They would not be advisable for table-top material where even tightly closed checks may eventually show through the finish. In other words, it must be expected that relatively short kiln-drying periods, such as 16 to 20 days, can be achieved only by some sacrifice in the soundness of the wood.

Abstracts

The Operation and Application of a Rotary Gravity Filter. J. K. Perkins. TAPPI October 1950, Vol. 33, No. 10, p. 513

The Waco Filter was invented in Sweden in 1939 and tested in this country in 1948 on a number of different types of paper mill waters. It may be used as a catch-all on industrial effluents where large volumes are discharged, thereby reducing stream pollution from pulp and paper mills, textile mills, chemical industries, etc. In many cases the filter can deliver effluents to the sewer with the efficiency of a sedimentation system using chemical flocculents. In pulp, paper and wallboard mills, the filter is used within the forming machine system to recover fibers in the white water. It renders filtrates normally suitable for showers and overflow to the sewer. As a water filter, suspended solids are removed with the efficiency of a straight sand filter. The Waco filter is a rotary gravity filter covered with a traveling wire cloth similar to that on a paper machine. The filtration is not done by the wire alone, but by a thin filter medium formed in advance on the wire before it enters the liquid containing suspended solids to be removed. The pre-formed coat of filter medium on the wire does the filteration and no influent passes through the bare wire. In most cases the filter medium is a layer of wood pulp.

A. J. Snyder

Tetrafluoroethylene Resin In Process Equipment. D. H. Hanson. TAPPI Nov. 1950, Vol. 33, No. 11 p. 541

Since its first uses in gaskets and packing for chemical process equipment, "Teflon" tetrafluoroethylene resin has been applied in a variety of places in the process industries. The product is completely inert to practically all chemicals and solvents, has outstanding heat-resistance and electrical properties, and has an unusual ability to resist sticking of very tacky materials. Discovered ten years ago, this resin is now in commercial production and has a bright future in many industrial uses.

A. J. Snyder

AFA-ECA

(Continued from page 51)

will cover the building industry; two the packaging field; and the final two, woodworking, finishing, impregnation, bakelization and lamination.

The project is a part of ECA's continuing program of technical aid to democratic countries.

The Forest Products Research Society, one of whose planks is the ever-increasing standard of forest resource utilization, joins in welcoming this Team and in saluting AFA-ECA on this great service project. We are certain much will be gained and learned on both sides.

Midwest Section Papers

Papers from the Rockford meeting of the Midwest section are available at $1 per set from this office. Many of these will appear in the FPRS All-Section Proceedings to be mailed to all members soon.

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Philadelphia Scene

Smithway machine men discussing molders. The boys from Spaulding investigate De Luxe saws.

Defense Picture

(Continued from page 31)

percent of its (a species') oven dry weight. In veneer for wirebound boxes we require that the top limit be held to 15 percent and the low limit be held is allowed to go down to nine percent.

"...We are in the process of reviewing all of our qualitative requirements for lumber in our container specifications. We are doing this in an attempt to bring about a greater degree of uniformity, to produce better containers, and above all else—to enable us to get more containers per tree."

PRESERVATIVES

George M. Hunt

". . .In wood preservation as well as in many other operations, shortages of preferred materials may force widespread use of second-or third-choice materials. The problem, then, is to make the best possible compromise and do the best job the conditions will permit. . . .

"Fortunately, each succeeding 'emergency' finds us with a greater variety of preservatives that can be used with confidence and a greater volume of laboratory and field tests and service records to draw upon.

. . .The extent to which specification requirements may be relaxed and chances taken should be governed in a large measure by the importance of the product or structure and the cost of maintaining or replacing it in case of early failure. . . .The need for maximum protection increases with the importance and the cost of the structure and the difficulties of repairing it without serious interruption in service. . . . No set of emergency rules or regulations can make adequate and fair distinction between more important and less important, but in time of national emergency and severe preservative shortages, every practical effort should be made to see that the best preservatives are reserved for the structures most in need of them."

LAMINATING

John G. Kuenzel

. . .In 1944, the Navy required 9,000,000 tons of steel, during the same

(Continued on page 58)

"OLIVER"
18-INCH
BAND SAW

Most complete Band Saw of its size!

"Oliver" junior size Band Saws have many refinements and adjustments developed for larger "Oliver" Band Saws. Table measures 24" x 20"—heavily ribbed, accurately machined. Tilts 45° to right. Has miter cross-cut gauge and parallel ripping fence. Takes 9" under guide, 18" between saw and column. Rips to 11" wide, miters and cross-cuts to 6½". This ball bearing Band Saw is precision-built to give years and years of smooth, dependable service.

"Oliver" also makes 30", 36" and 38" Band Saws for woodworking plants

Write for Bulletin No. 192-D

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Much of our current production is moving out on Government requisitions.

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★ **MORE ACCURATE CUTTING** proved over nearly half a century of use.

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★ **GREATER SAFETY** with American's great protection features.

★ **LONGER LIFE** and lowest upkeep with American's rugged construction.

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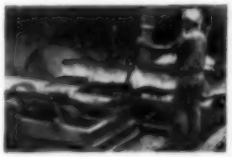

	Headblock Opening	Carriage Length
American No. 1 Mill	38"	16'
American No. 3 Mill	44"	20'
American Porta-Mill	34"	10'

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Send for your copy of American Catalog A50—gives details about the great American mills — choice of leading lumbermen for two generations.

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The Moore Direct Gas-Heated Cross-Circulation System is designed for the small, medium or larger plant. Drying elements are automatically controlled and recorded with the Moore Master Recorder-Controller.

Write today for information on how this modern drying system can prove a quick paying investment at your plant.

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Oldest and Largest Manufacturers of Dry Kilns and Veneer Dryers

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(Continued from page 56)

Auto-Nailer and Catalin Corp. drew an attentive audience.

period 3,000,000 tons of wood were required for all types of naval military construction, afloat and ashore. It is becoming increasingly difficult to meet the requirements for shipbuilding timbers from our domestic old-growth trees. . . Wood is our only naturally renewable structural material. It is significant that the present shipbuilding program gives high priority to wooden vessels of non-metallic, non-magnetic, laminated design.

"The quality of structural timber and special boat and shipbuilding lumber must conform to certain basic principles of design. These materials for use in stage and scaffold plank, shipdecking, planking and framing timbers must be stocked in the highest grades and largest sizes available and their procurement, therefore, presents the greatest problem from the standpoint of available supply.

". . .White oak, because of its structural superiority and durability, is an important component of many types of wood hull naval vessels, including 35 designs of patrol, landing, district craft, minesweepers, auxiliary transport, salvage and rescue vessels.

". . .The total white oak requirements for the present wood shipbuilding program are tentatively estimated at approximately 30,000,000 board feet. This is approximately one-sixth of the 1950 production of this species in grades of No. 1, Common and Better. . . .As a part of this program, the facilities of American forest products industries to produce laminated ship timbers are being studied for mobilizaton.

"The development of marine laminates such as are specified in the present naval wood minesweeper program originated about 1939 or 1940. The process evolved for gluing large straight timbers for the Bureau's gigantic needs utilized principles of laminated arch construction. . .

". . .In 1942, when the need was great, the Bureau called a conference of synthetic adhesive manufacturers. . . and their laboratories produced. . . a resin adhesive curing at a lower temperature than the boiling point of water, and durable under extreme service at sea.

". . . The intermediate and room-temperature-setting adhesives of phenol, melamine, or resorcinol base formulated for marine laminating are procured under Military Specification MIL-A-397. Adhesive suppliers are required to submit proposed intermedi-

(Continued on page 60)

MANSFIELD

Dependable DIMENSION *Stock*

Mansfield Dimension Stock is manufactured to meet your most exacting requirements. The Hardwoods and Pine are selected from the 40,000,000′ production of our two band mills. The lumber comes from Mansfield timberlands all on selective cutting perpetual yield basis.

The Mansfield Dimension Plant with its modern machinery, trained manpower and supervision and long experience in the field provides the "know-how" that means complete satisfaction and lower production costs.

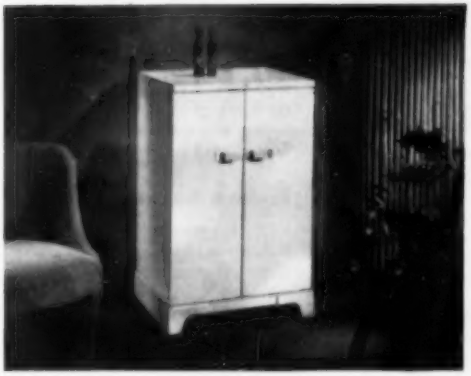
We specialize in glued-up panels and furniture dimension, either semi-finished, or moulded, equalized and tenoned. However, our plant is equipped and available to produce interior trim, stair treads and risers or practically any other item to meet your requirements. Send us your specifications. Our prompt quotations and samples will convince you that Mansfield Dimension is your best buy today.

MANSFIELD HARDWOOD LUMBER COMPANY

P. O. Box 91 **Shreveport, Louisiana**

Band Mills: Zwolle and Winnfield, La. . . . Dimension Plant: Zwolle, La.

Where does ATLANTIC LUMBER go?



Philco model 1836-5
Television cabinet in blonde oak.

The startling beauty of this modern cabinet makes it stand out in any setting. Whether you use Atlantic Lumber to create a beautiful cabinet, a comfortable chair, or any other long-lasting product . . . you get greatest value by combining fine design, the right hardwood, and superior craftsmanship.

Your Atlantic man knows your hardwood problems. Often he can help you. Ask and follow his advice.

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CLOSED BACK PC NAILER
accommodates work from 1" to 18" deep. 8 or 12 run nail feed; 8 nail drive; 4d, 5d and 6d nails. Ideal for flat nailing, box making, cleating and lidding. Ammunition box end making.

fmc
SCREW DRIVING MACHINE
drives up to four screws simultaneously into wooden boxes and other assemblies. Ideal for screwing hinges, swivels and hasps on small ammunition or similar type boxes.

fmc
ALL PURPOSE INDUSTRIAL NAILER
24 nail drive head; 87 strokes per min.; all type nails, 3d to 16d. Open back: 48", 66", 80" standard widths; others available. Designed for large scale industrial nailing.

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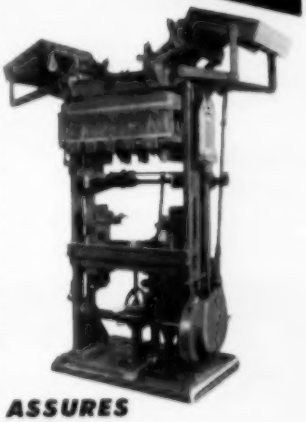
AMMUNITION BOX MAKER...



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fmc model Ac-5A nailing machine nails sides and bottoms to ends of various types of ammunition and industrial boxes. Handles boxes up to 16"x16"x26" wide. Completes 125 to 150 boxes an hour, depending on type of box. Drives 6d to 8d nails. Geared to operate at 53 strokes a minute. Basic machine drives up to 24 nails per stroke. Can be equipped to drive 32 nails per stroke.

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☐ *Industrial Nailer*
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☐ *Screw Machine*
☐ *(AC-5A) Nailer*

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CITY _____ STATE _____
NM. 7

(Continued from page 58)
and boat members are described in specifications MIL-O-15154 and MIL-F-2038 respectively. . . . A little less than 10 years of experience in the laminating field by several naval shipyards and by private concerns specializing in laminated wood for naval construction have established the need for a relatively high temperature of cure to develop oak glue joints equal in strength to solid wood that resist delaminating under extreme service conditions in sea water. A number of phenolic-resins and melamine adhesives cured at 190° F. at the inner glue line for 10 hours and resorcinol adhesives similarly cured at 140° F. for 10 hours have successfully resisted delamination in white oak beams as shown by several years service use and . . .exposure tests. . . Each type of adhesive and each species of wood to be glued must be related to a definite laminating procedure based on performance requirements."

SPECIALIZED USES

Frederick T. Peden

". . .The wood requirements for specialized military uses concerning the Quartermaster Corps might well be separated into three categories, (1) furniture items, (2) field equipment items, and (3) oversnow equipment items.

"The Army is the largest single buyer of furniture in the world. During the period of 1946 to 1950, upwards of 45 million dollars were expended for furniture for officers' and non-commissioned officers' quarters. Approximately the same amount was spent for office furniture and items of office equipment.

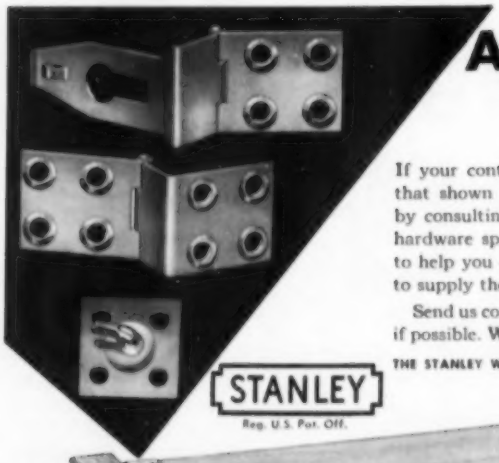
". . .Two types of quarters furniture have been developed. . .wood furniture of the conventional construction is used in the U.S. and a combination of metal-wood is used for overseas. The all-wood furniture is of Classic 18th century design. The face veneers are either walnut or mahogany. Solids are beech, birch, sweet gum, hickory, maple, walnut, mahogany, hard maple or pecan. . . .The most critical problem during the procurement of this furniture was obtaining a good grade poplar for the lumber core panels.

Research Essential

". . .Experience has shown also that research in forest products is essential to the effective carrying on of a war program. It is, broadly, the function of research to develop more efficient use of forest products, to develop improved products, and to reduce wood waste in its various forms. . . .Research must be directed toward the use of high grade wood with maximum efficiency and toward making the lower grades, as well as the imported woods carry more of the load."

PHILADELPHIA SCENE

Visitors get some saw pointers from DeWalt's Ross Stevens



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If your contracts call for hardware for ammunition boxes like that shown here, or for other ordnance equipment—save time by consulting Stanley. The largest manufacturer of hinges and hardware specialities, The Stanley Works has the "know-how" to help you develop the items you need, and the plant facilities to supply them on time.

Send us complete details of your requirements, including prints, if possible. We'll help you meet delivery commitments.

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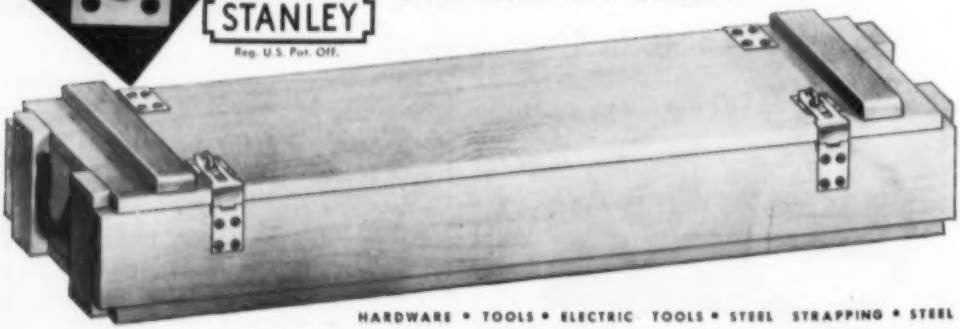

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(1) Description — 1-1/8" diam. in 54" and 72" lengths, tapered and bored on one end, rounded on the other.

(2) Grade—Mill run or seconds.

(3) Delivery — Fall 1951, Spring 1952, and Summer 1952.

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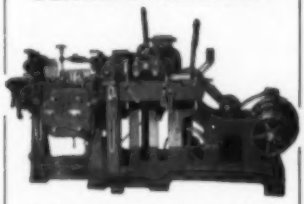
HERMANCE NO. 60 HIGHSPEED BALL BEARING MOULDER



A modern machine for the Rapid and Accurate production of Small Mouldings or for four side planing. Ideal for detail work. Quick to set up. High spindle speed, 5400 RPM, means fine one-knife finish at fast feeds. Handles stock from the smallest to 6" wide and 3" thick; bed drops 16" for running wide stock on edge. For fast feeds it can be furnished with four knife heads, knife jointers, electric grinder and automatic hopper feed. The low initial cost and many advantages of this machine will appeal to you.

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OUR Quality Control Department and its force of ten men are always guiding our high quality product to you.

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BLACK MOUNTAIN, N. C.

CALL, WIRE OR WRITE FOR *Quality Service*

SPRAY GUNS

(Continued from page 28)

cap and fluid tip to use for any specific condition.

In any spraying job, there is a proper air-fluid balance. The fluid tip provides the right amount of finishing material, the air cap provides the proper amount of compressed air to do the job properly. Valve adjustments on the spray gun; fluid pressure adjustments at the pressure feed tank; or air pressure adjustments at the air transformer will alter air-fluid balance.

It will be wise for the finishing equipment maintenance man to familiarize himself with air caps and fluid tips. The manufacturer has actually designed a number of different spray guns for varying purposes, and has provided those guns with a wide range of differing air caps, he is sure to arrive at the proper answer more quickly and closely than any maintenance man could possibly do.

Air caps can be turned on the end of the spray gun. There are at least two reasons for rotating them. Sometimes gunstrokes must be crossed. This can often be done by turning the air cap to reverse the spray pattern. It may be necessary to lubricate the rubbing surfaces regularly to keep the cap easy to turn if this is done often.

Sometimes the spray pattern becomes distorted and must be corrected. The air cap is often turned to determine the cause for this. It is at once assumed that the distortion trouble is caused either by the fluid tip or by the air cap. Note the most pronounced part of the spray-pattern defect, location-wise. Now, turn the air cap 180 degrees. Spray again, and check to see whether the defect formerly observed has moved 180 degrees around the spray pattern. If it has, it proves the trouble is in the air cap.

Distorted Pattern

In either case, there is dried material or some other obstruction and the heavy-paint side of the distorted pattern will answer to the location of the obstruction radially. The free or unclogged side will blow most of the finishing material over to the side where the obstruction is located.

Unless the fluid needle seats properly in the fluid tip, it cannot function properly. The needle packing must be right, or there will be more trouble. Leaking paint or a sputtering spray indicates this trouble. If proper attention to cleaning and packing maintenance does not overcome the trouble, a new needle is indicated.

Some have advocated grinding the needle into the fluid tip with valve grinding compound when fitting a new neddle. This is believed to be a doubtful practice. The fluid tip and the needle must have their axes constantly held in a common line while the needle is rotated for such grinding. Any variation in this respect will likely result in more harm than good.

If the packing nut is screwed down too tight, packing will be so tightly compressed around the needle as to retard its axial motion. The packing nut must be backed off enough to allow the needle free motion. The packing should be lubricated often enough to keep it and the needle in good working condition. Like most packing, that in a spray gun needle valve usually has a graphite content. Therefore, at any time lubricant is added to the packing, it is well to stir a little powdered graphite into it before application. Careful maintenance of packing and proper adjustment of the packing nut will usually be rewarded by a smooth-working, well-seated needle.

THE END

SHIMER DOOR HEADS

4, 6 and 8-bit model Shimer Door Heads give you all-around clearance cut to prevent chipping the work — at the fastest feeds — plus expansion feature for wider or narrower panel grooves! Equipped with long-lasting Shimer Circular Bits!

there's a Shimer Head or Cutter for every cutting problem...

WRITE FOR YOUR FREE COPY OF OUR ILLUSTRATED PATTERN BOOK!

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SAMUEL J. SHIMER & SONS, Inc.
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NORTH COAST DRY KILN

"DIRECT - FLO"

Reversible Circulation • Uniform Drying

NEW KILNS • KILN MODERNIZATION • KILN ACCESSORIES

The North Coast Dry Kiln is the most efficient kiln in operation today. The fans are positioned at the side of the lumber loads so that air follows the shortest possible "Direct-Flo" path. This insures uniform efficient drying for the lowest possible power consumption.

We can manufacture kilns to your specifications.

Write for details to Dept. W-3.

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ENGINEERS AND MANUFACTURERS
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PHONE WAlnut 4000

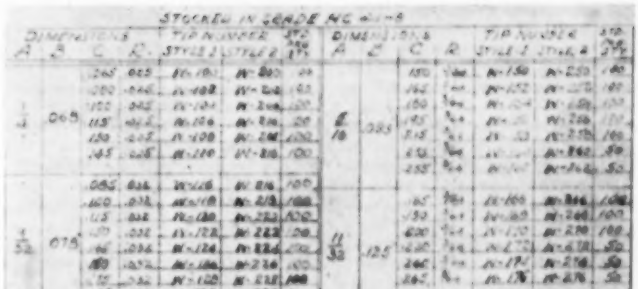
CARBIDE STANDARDS

(Continued from page 34)

of these manufacturers. A temporary or proposed set of standards was then developed from the above information, from past orders, from actual saws checked in use in various plants and from suggestions received from users, manufacturers and engineers. This proposed set of standards was then mailed to a majority of the carbide saw manufacturers for further criticisms, corrections or suggestions for addition or elimination of shapes or sizes.

The answers, both written and verbal, were compiled and fitted into the initial or proposed standards. The Firth Sterling standards for saw tips and knives presented herewith are the result of this work.

The acceptance and use of these standards by the saw manufacturers has been extremely gratifying. These standards allow some variation of the "C" dimension in each A and B grouping. It is the belief of most of the carbide saw manufacturers that these standard tips can be used in 90 percent–95 percent of the carbide saws and groovers required by the wood industry.



SAW tip standards to be proposed to the ASME Wood Industries Division.

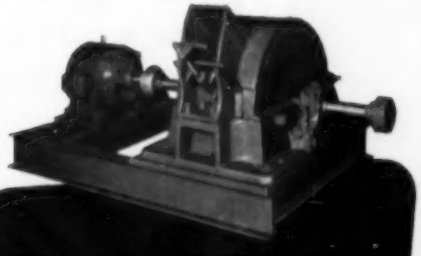
The author believes that this primary attempt to establish standards in the carbide wood cutting tool industry will aid in eliminating much of the confusion which now exists in this industry.

These standards will be presented to the Wood Industries Division of the American Society of Mechanical Engineers for review. This society is organizing a carbide wood cutting tool committee to compile data on design, fabrication, operation and

(Continued on page 64)

M & M utilization equipment

FOR HARDBOARD MANUFACTURING



Let M & M Disposal Equipment turn your waste into profits. These machines are built in many types and sizes for slabs, edgings, trim, blocks, veneer, bark, and other combustible waste. Don't overlook the extra dollars that can come from utilizing every available bit of waste. Send us your problem and we'll show you how M & M Disposal Equipment can solve it.

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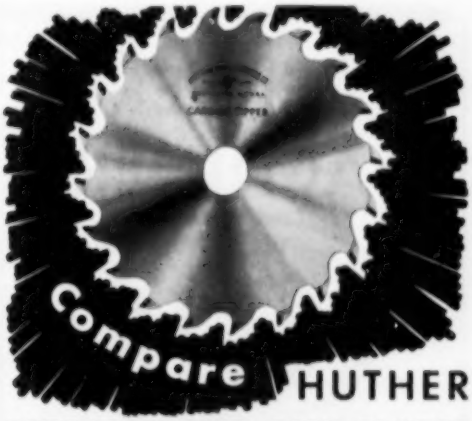

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with any others and you'll agree they're outstanding. Cut with equal ease thru plywood, laminated wood, teak, fireproof lumber, linoleum, plastics etc. Huther Quality in Carbide Saws is a "standard" among leading craftsmen.

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SAW MAKERS FOR OVER 65 YEARS

(Continued from page 63)
maintenance of all carbide wood cutting tools. These standards will also be referred to the Carbide Industry Standardization Committee for acceptance.

The woodworking machinery manufacturer, the tool manufacturers and the ultimate user of carbide wood cutting tools have approved the initial effort to establish standards as quickly as possible.

Every effort has been made to set standards for woodworking knives which will fit into standard cutter heads, standard shaper and molder knife sizes and to provide ample clearance on standard saw blade gauges. Alterations, additions and eliminations will be made in these standards as the needs and requirements of the wood industry change.

THE END

HELP WANTED
The type of man who reads WOOD and WOOD PRODUCTS is the thinker and the doer.—The sort of man you've been kind-of-thinking about adding to your staff. An ad in the Trading Post will find him.

LOG GRADES

(Continued from page 32)

log. The dollar value of the lumber at current prices is shown in Table I for each grade of log Values per M. board feet.

In the No. 2 log grade patterned after the Forest Products Laboratory hardwood grades we have 0, 1, and 2 No. 1 face logs appearing. Here we have the same situation that exists in the regular No. 2 grade of other hardwood logs. All three of these type logs would be bought at the same price because they were No. 2 logs, and yet there is a lumber value spread of $60 dollars per M board feet as well as a wide fluctuation in the grades of lumber produced. Quality control of log grades in the woods would produce more logs possessing one and two No. 1 faces from the material now falling in the general No. 2 log pattern. This control would result in a decrease in the amount of No. 2 and 3 Common lumber produced from No. 2 logs.

Log grades and grade recovery present still a closer means of quality control to the sawmill. The recovery by grades in most studies is based on data obtained from several mills and represents an average picture. By using these data, any mill can check its own recovery and over-run. If they so desire, they can build up standards of grade recovery and over-run based on their own operations and use these standards as a basis for quality control.

Within the past few months there has been an increasing interest on the part of some lumber companies in working out the lumber requirements of the individual consumer, and then supplying him with the grades best suited to his requirements. Such a program properly carried out places increased responsibilities on the sawmill if the consumer is to receive all the benefits possible. One knows that within each standard grade of lumber one can establish a "rip-grade", a "cross-cut grade", and a "neutral grade". Within each sub-grade of a standard grade, a definite pattern of size and length of cuttings can be established for a given width and length of board. Some consumers prefer either a rip-grade or a cross-cut grade depending on the product they manufacture. The consumer requiring long clear cuttings experiences a higher waste factor when processing cross-cut grade boards and also devel-

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Cut Costs
WHEN CUTTING
WOOD OR PLASTICS

MEYCO

CARBIDE TIPPED CIRCULAR SAWS ARE ENGINEERED FOR TUNGSTEN CARBIDE

MEYCO carbide tipped saws are in a class by themselves, because the blades have been engineered for the addition of the carbide cutting teeth. It is this engineering know-how of building a carbide tipped saw from the ground up, that has made the MEYCO circular saws unique . . . that has accounted for repeat orders and a customer satisfaction of which we are justly proud.

VIBRA-FREE*

THE NEWEST THING IN CIRCULAR SAWS

Vibra-Free* dampers make it possible to distribute the stresses and strains inherent in every blade MORE EVENLY, thus producing an even better carbide tipped saw than has been possible heretofore. Vibra-Free* dampers absorb the sound waves set up by the motion of the saw, thus doing away with the objectionable, high pitched whine, plus the rough cut produced by vibration.

Write for new catalog describing these Meyco Saws in detail.

*T. M. Reg. U. S. Pat. Off.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

ops an over-supply of short cuttings. Other consumers can use either one or a neutral grade equally well.

Recognizing grades within grades and the type most suited to the consumer places a definite responsibility on the sawmill. The sawmill frequently can process logs so as to obtain either type. If the mill operator knows the requirements of the consuming markets, he is in a position to cut the type board most suited to the consumers needs. This also opens up the possibility of showing the consumer where a lower grade can be used providing the right cutting grade is supplied.

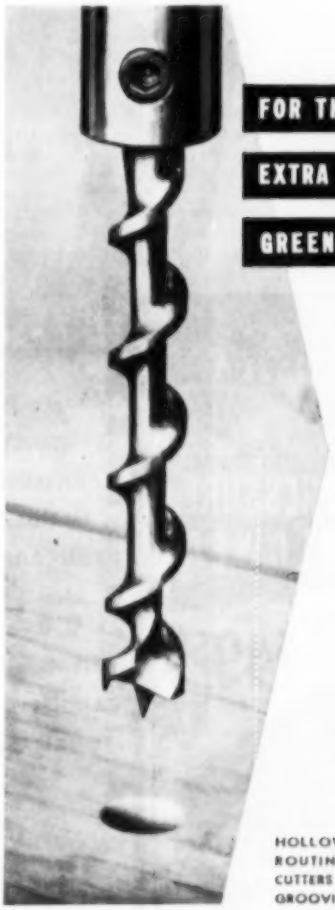
Length and grade of board supplied the consumer has a direct influence on his final lumber cost, his waste factor and utilization, and also on the sawmill. As an example consider a clear 1x6x8' walnut board and a consumer whose longest clear cutting is seven feet. When a seven foot cutting is taken from this board we have a 1x6x12" piece left which is a legitimate No. 2 Common cutting in walnut. Assuming a price for kiln-dried lumber at the factory at $380 per M. for 4/4 FAS, this board is worth $1.52 or $.38 per board foot. The half board foot left over in the 1x6x12" cutting cost $.19. Dry No. 2 Common stock at $.12 per foot puts a value of $.06 on this small piece. Every time the consumer has a piece of this short stock developing out of an FAS board he is actually losing $.13 even though he will use this piece in his operations. At the same time he is influencing the utilization of raw material in the woods and the ability of the sawmill to merchandise the lower grades of lumber.

Widths and lengths of boards affect both the quality control in the sawmill and consumer utilization. At the sawmill it has a definite bearing on the percentage of each grade developing in the operation. To the consumer it has a definite bearing on the amount of glue he consumes as well as his waste factor on the rip saws, chain jointers, and matching saws.

Some yield studies have been built up showing the various size cuttings that can be obtained from a thousand feet of each grade of lumber. However, each consumer has several cuttings to obtain at the same time and his yield, utilization and waste factor is based on the over-all picture rather than on what a thousand feet of a given grade will yield in a specified width and length. Studies based on the over-all picture bring out the consumers cuttings in relation to the standard grades of lumber and his yield from each grade based on his own operating conditions. Such a study brings out clearly the width-length relation in each grade, and also shows the amount of lower grade cuttings that develop from higher grade boards. From such a study, consumer and supplier have a means of determining quite accurately what widths, lengths and grades the consumer need to produce his product with the minimum amount of short cuttings which may or may not be waste to him.

Some uses of hardwood lumber call for sound cuttings only. This is an excellent opportunity to utilize sound low grade logs providing the consumer's cutting lengths are known.

The successful quality control and utilization program of either the logging operation, sawmill, or consumer depends on a thorough understanding and integration among all three. The mistakes of one are reflected in the operations and economic well being of the other two. The key to a successful program is in the ability of the sawmill personnel (1) to translate consumer cutting requirements into standard grades, widths and lengths giving maximum cutting value and minimum waste, (2) to carry these standard grades, widths and lengths through the sawmill activities; and (3) to translate them into log grades and lengths when occasion demands.



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EXTRA STURDY, SOLID-CENTER

GREENLEE MACHINE BITS

On these boring jobs where you need an unusually sturdy tool you'll find the GREENLEE Solid-Center Machine Bit an outstanding performer. Its husky stem, or solid center, is a round section continuing from point to shank and increases in size toward shank . . . allowing proper clearance, yet a heavier body where strain occurs. Its accurate cutting edges are of extension-lip pattern with two cutters. Write for facts. Greenlee Tool Co., 2157 Herbert Avenue, Rockford, Illinois.

TOOLS FOR CRAFTSMEN

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HOLLOW CHISELS • MACHINE BITS • DRILLS
ROUTING BITS • MULTI-SPUR BITS • PLUG
CUTTERS • COUNTERSINKS • MAKERS OF TECO
GROOVING TOOLS FOR TIMBER CONSTRUCTION

CMP and YOU

(Continued from page 25)

ing essential production needs into material requirements." If this sounds foggy, it means in a rough way that a manufacturer with a contract to build a weapons carrier or a bulldozer or any other defense item, in applying for an allotment of materials, must indicate the total amount of these materials he's going to need. Under some conditions he may be asked to submit a "detail bill of materials;" that is, a complete listing of component parts, including sizes, shapes, weights and qualities. But, if he's done similar jobs before, and especially if he's dealing with a Claimant Agency such as the Defense Department that has complete blueprints and material lists of its own, he may be asked merely to list total quantities.

Products are divided into "A" and "B" lists; and it's important that you know how your product is classified, since this will determine the form to be used in applying for allotments. You can consult the "Product Assignment Directory and Official Class B Product List," and probably get a copy for yourself, at any Department of Commerce field office. This booklet carries the complete listing.

You should know if you're a prime or secondary consumer of controlled materials. You're a prime consumer (prime contractor to you and us) if you sell "A" products to a Claimant Agency which authorizes your schedule of production and your allotment of controlled materials. You're a secondary consumer if you sell your "A" products to another manufacturer who approves your production schedule and assigns you a proportionate allotment of controlled materials. This isn't the complete story, but it'll serve as a guide.

CMP Regulations 1 and 3, both issued on May 3, carry much added detail about the plan. Regulation 1 has instructions about filling out and filing applications for allotment of controlled materials. There are two different forms; CMP-4A, and CMP-4B. The one you're supposed to use depends on the kind of products you make and your status as a consumer. These two regulations will give you much basic information about CMP. However, as this page understands it, the filing instructions were intended for the third quarter of 1951, which has now begun. It is probable that detailed changes will be made during this quarter. In fact the NPA says this gathering and testing period. A Washington leader of this industry says it'll be a "period of experimental confusion." Probably a good estimate.

PRODUCT CONTROL

(Continued from page 33)

duction costs. The smaller encircled figures are the cost figures. On a predetermined piece rate of 120/hr. there is a total cost of $30.00 for 3 men. On earnings that fall below this average a check is made. Thus, one has a daily earning record of each productive employee. At the time one re-prices costs, new figures are used to bring them up to date.

Figure 4 shows the recap sheets which follow production from operation to operation, gives us a waste factor from previous operations and is used to determine the daily employee earnings as the information is taken from the daily time sheets.

This production record system as shown is very easy to maintain daily and gives a fairly complete production check, cost system and employee production check.

FURNITURE
CABINET
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PURE WHITE ASH STOCK

The Atchafalaya Basin of Louisiana produces the most uniform white ash for color and texture in America. That's why the finest manufacturers use Port Barre White Ash.

Large and well assorted stocks are ready for immediate mill shipments at all times. We can meet your exact needs, all thicknesses and grades 5/8" to 12/4". Prompt attention will be given to your inquiries.

The Port Barre Lumber Industries, Inc.

Manufacturers of Southern Hardwoods
Port Barre, La.

HANDLING

(Continued from page 29)

of lumber measuring 8 ft. wide, 16 to 18 ft. long and 11 ft. high.

When a pile is to be built up, bunkers, made from 3-in. I-beams 8 ft. long, are laid on the trucks at right angles to the track and spaced about 2 ft. apart. Lumber is then laid on the bunkers and at right angles thereto (that is parallel to the track) in building up the pile, as shown. Between each layer of lumber, spacer strips are placed transversely above and parallel to each bunker, leaving space for air circulation between layers.

All piles are built up at the dock when cars are unloaded and each board is inspected and measured as it is laid on the pile, as a check on the shipper's invoice. To keep piles neat and uniform in size, movable racks are placed at each side. Slots in the rack provide for straight alignment of stickers. These racks insure that piles will fit kilns and in storage locations. There are parallel tracks in buildings A and B, in the unloading dock C and in the concrete floored green storage yard back of the new kiln building, B.

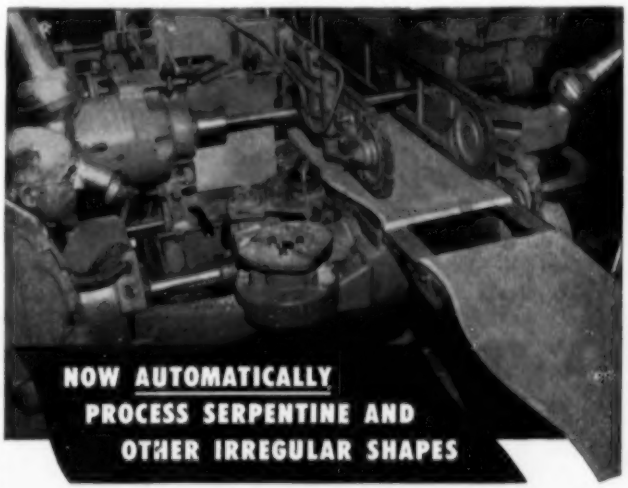
Directly back of buildings A and B is a pair of tracks for a transfer car. These are spaced 14 ft. apart, run at right angles to the other rails and are at a lower level in a concrete alley. Buried in the concrete parallel to each rail is a steam pipe to supply heat for melting snow and keeping these rails free of ice. On the transfer car, which carries a gas-driven winch, there is a pair of tracks level with and parallel to the storage tracks.

The transfer car can move piles of lumber as a whole from any of the storage tracks to any other tracks, including those that serve the kilns, green storage, unloading dock and dry storage house. The transfer car is self-propelled but moving of piles along storage tracks and those parallel thereto is done by the winch cable. This cable is either attached directly to the pile for motion toward the winch or over a sheave for motion away from the winch. After a pile is built up in the unloading dock, the pile is shifted to green storage, or directly to a kiln or to the covered space of the kilns, if transfer to these is to be made soon.

Paralleling the transfer car rails over nearly their whole length are doors that can be rolled back on overhead rails when it is necessary to shift piles of lumber into or out of building A and B. Normally, after a pile is completed at the unloading dock, it is shifted first to green storage, then to a kiln and finally to dry storage where it stands until unloaded into two-wheel hand trucks (in small lots) for transfer to the adjacent wood shop.

Except for this last transfer and for the original unloading, however, there is no handling of individual boards or sticks, the piles being shifted as a whole by use of the transfer car. In general, the latter is needed only a few hours a day at most and is operated by one man and a helper who do other work when not using the car. Old road trailers are not needed and the tractor that shifted them is employed elsewhere, as are the men who used to spend most of their time in building and tearing down piles.

All drying is done in modern steam, reversible kilns, on an automatic basis, under preset conditions determined by precise measurement of initial moisture content. Checks are made of samples placed in pile recesses as drying proceeds. Degree of drying is also controlled and excessive drying is carefully avoided.



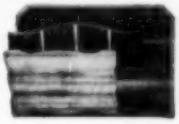
. . . with the GREENLEE No. 545 Double-End Tenoner incorporating the revolutionary new GREENLEE Irregular Shaping Attachment

Again the versatile GREENLEE Double-End Tenoner puts more unusual, time-consuming woodworking operations onto a *streamlined* production basis.

Serpentine edges, hex corners, round corners and various other irregular shapes, such as typical examples shown at right, become a matter of simple, swift *automatic* processing. Operated by an exclusive cam arrangement the new GREENLEE Irregular Shaping Attachment does work precisely, smoothly, speedily.

And to let you quickly "tailor make" cams in your own plant for faithfully producing various shapes of *your own designs*, the GREENLEE is equipped with an easily operated cam-cutting unit.

Now, more than ever, the GREENLEE Double-End Tenoner is "a woodworking plant in itself". For these shaping operations are *in addition* to the many others normally performed by this multi-purpose machine. Write for bulletin. Greenlee Bros. & Co., 1927 Twentieth Avenue, Rockford, Ill.



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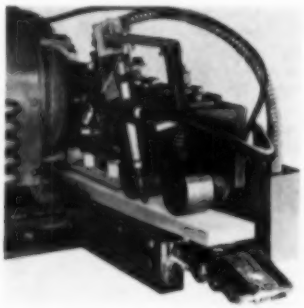
New Hot Press

Plycor's Type B.V.H., hot press is a compact, pitless, hot press which operates on either high or low pressure steam. A self-contained steam generator is available for spots where steam lines are not. A maximum specific pressure of 100 lbs. psi is developed over the entire hot plate area. Greater unit pressures are developed on the work providing pressure for all normal requirements. Equipment includes automatic pressure control. The unit is now available in one size—99 in. by 51 in., loading on the 99 in. side. Frame made to accommodate five openings, but 1-4 openings can be installed if desired. Prompt delivery. Write Plycor Div., Earle Hart Woodworking Machine Co., Dept. W., 565 W. Washington Blvd., Chicago, Ill.

Mobile Sawmill

The new Anders-Crosby Mobile Sawmill travels the highway at 20 mph under its own power. It is said that the unit can be set up in the woods ready to saw inside of 15 minutes and will cut up to 20M board feet of lumber a day. A 4-cylinder General Motors Diesel engine operates the mill's 52-in. saw and furnishes power for propulsion. Anders Machine Shop, Liberty, Mississippi designed the rig for the Crosby Lumber Company of Crosby, Mississippi.



Moisture Detector

Marketed under the trade name "Laucks Sentry", a new instrument

MIXED CARLOADS

Get a Variety of Hardwood Products ALL IN ONE CAR

Plywood	**Lumber**
Flooring	**Veneers**
Thresholds	**Risers**
Moldings	**Treads**

Dimension
Cedar Closet Lining

MICKEY BROTHERS, INC.
MEMPHIS, TENNESSEE

SAFE HANDS LOSE NO TIME

Natural-rubber* treaded
Grab-it

Non-slip grip, wet or dry; extra protection against cuts; and 5 to 10 times longer wear

Rubber-Treaded wearing surface wears like a tire. Far outlasts higher priced leather.

Non-Skid: Rough surfaced, waterproof rubber grips firmly, safely, easily—wet or dry.

Strong, Comfortable Fabric lining and back. Feels like any canvas glove. Flexible.

Big, Full Hand Size with elastic on back to fit snug on any hand.

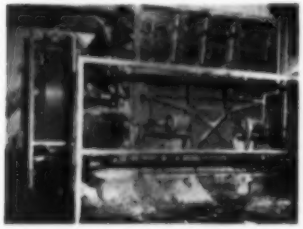
The ideal glove for woodworkers and lumbermen

* *Also NEOX (reinforced neoprene) and plastic coatings, over-all or palm-and-thumb only. Gauntlet, safety cuff and knitwrist styles.*

Smart management supplies good work gloves
Safer, more comfortable coated-fabric gloves speed work handling, reduce lost-time accidents, improve comfort and job attitude. *And cost less because they wear far longer.*

Edmont Mfg. Co., 1268 Walnut St., Coshocton, O.
World's largest maker of coated industrial gloves

for the detection of moisture in lum-24. Wood-2074 13/9on10 cal HPC. ber and wood products is in operation on the West Coast. The unit was installed on a jointer and was set to mark automatically all stock with an MC in excess of 8½ percent. The ink marker on the detector is actuated through a relay by a signal originating at the electrode. Thus, all stock with too much moisture was marked automatically with red ink. The Plywood Research Foundation pre-tested the unit which is being manufactured by the Technical Instrument Division, Lauks Laboratories. Further information is available from the marketing organization, Lauks Sentry Products, Dept. W., 4441 Stuart Building, Seattle 1, Wash.



Gruendler Re-Chipper

Mill wastes consisting of Fir, Cedar and Hemlock refuse from log-barking and chipping-plate are speedily reduced to desirable fineness for fuel and various by-products with the Gruendler Re-Chipper.

Refuse, mill wastes, turned into profitable by-products with low power requirements by means of this compact Re-Chipper installation is said to create additional revenue for many mill operators.

The Gruendler Re-Chipper is designed for 100 tons per hour production. An illustrated bulletin may be had upon request to Gruendler Crusher & Pulverizer Co., Dept. WWP, 2919 North Market St., St. Louis 6, Mo.

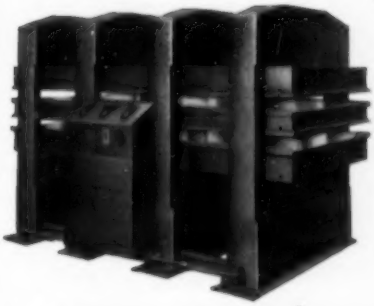
Panel Board

Novoply, a three-ply board will shortly be produced by United States Plywood Corporation at its recently completed plant at Anderson, Cal. It has a capacity of 40,000,000 feet a year. Novoply will be used for furniture, wall paneling and a base for mounting veneers or plastic laminates. Novoply consists of a 1/16" surface of thin laminated wood sections, a core of medium size wood chips and a back corresponding to the face. The wood segments are resin-coated and impregnated, the three layers fused together under heat and pressure. Fred Fahrni, Swiss engineer, is the inventor. The United States Plywood Corporation has an exclusive license for the United States and Canada. Novoply, while water resistant is intended for interior use only.

Wood Study Kits

In the past year over 2,500 wood study kits have been furnished to interested people by the Timber Engineering Company, an affiliate of the National Lumber Manufacturers Association. Many lumber companies use the kits in their sales programs. Neatly packed in a small wood box (8⅝ in. by 7⅝ in. by 6 in.), the wood study kit contains 54 specimens of important commercial species of wood and wood products used in the United States. A knife, a 10-power hand lens and an 84-page illustrated manual are included. A new booklet containing 19 wood experiments has been added to the kit. Wood study kits are sold by the Timber Engineering Company, Dept. W., 1319 Eighteenth Street, N.W., Washington 6, D. C.

the modern design



for increasing production of your veneering and laminating operations

The New

VB hot press

Check ALL these "Years Ahead" features that give you . . . . .

ACTUAL PRODUCTION ADVANTAGES

The modern design of the "VB" Press gives you savings in glue, veneer and labor. After-drying storage space is eliminated and the smoother surface of panels produced eliminates sanding and finishing costs. Compactly constructed, the "VB" Press requires no pit, giving the user a wide choice of placement for more efficient production.

Write for Illustrated Bulletin

* ALL ENCLOSED FRAME
* ALL WELDED STEAM HEATED PLATENS
* PRE-ADJUSTED WORKING PRESSURE
* COMPACT HYDRAULIC SYSTEM
* AUTOMATIC CONTROL PANEL

V.B Berthelsen ENGINEERING WORKS, INC.

P. O. BOX 1423 • LOCKPORT ROAD • JOLIET, ILLINOIS

A B C's of Mill Layout

A new 8-page brochure illustrating the three basic lumber planing production lines has recently been published by Stetson-Ross Machine Co., Dept. W., 3200 1st Ave. S., Seattle 4, Wn. Written by Peter Koch, the paper covers auxiliary handling and trimming machines also. You may get your copy of "The ABC's of Planing Mill Layout" free from Stetson-Ross.

New Lumber Stop

The Irvington No. 15 Accura Gauge is a highly accurate lumber stop designed for use with all types of cut-off saws. All parts are machined. The accurately broached and slotted square hole permits positive clamping against all four faces of the bar. No set screw is employed for clamping. The set screw located in the face of the swinging stop lever provides a micrometer adjustment for any measurement desired. By removal of the set screw on adjacent stop, then extending set screw of original unit to the lever face of adjacent gauge, accurate cuts may be made as close as 3/8" apart. The graduated bar normally furnished with these stops is equipped with an etched steel rule recessed in its face. Further detailed information on the Irvington No. 15 Accura Gauge may be obtained by writing Irvington Machine Works, Dept. W., 1808 N. E. 7th Avenue, Portland 12, Oregon.

there's a MONITE GLUE....

to solve your GLUING PROBLEM!

WHAT ARE *YOU* GLUING? Is it furniture . . . plywood . . . laminated structural members? Whatever it is . . . if you want maximum strength, water resistance, top speed production and lower manufacturing costs . . . there's a Monite Glue especially designed to solve *your* gluing problems.

LIQUID, RESIN and CASEIN—all members of the famous Monite family of quality adhesives—are available now to meet your requirements for water resistance, working life, joint strength, application ease, hot or cold bonding, etc.

Gluing Problems . . . whether specific gluing applications or general glue room operation . . . it will pay you to draw on our 35 years' experience in development and manufacture of glues. Send us your problems—there is NO OBLIGATION.

H. L. Prestholdt, President

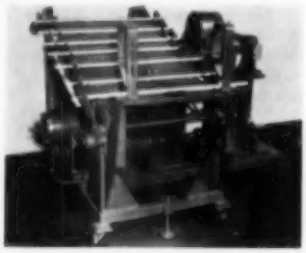
TRADE MARK MONITE WATERPROOF GLUE

MONITE WATERPROOF GLUE COMPANY

1628 NORTH 2ND, MINNEAPOLIS 11, MINNESOTA

Polishing Head

A new portable brush-backed polishing head has been developed by the Vonnegut Moulder Corporation, Indianapolis. The portable head consists of two principal parts: an outer shell or drum, holding sixteen replaceable brushes, and a center spool on which are coiled sixteen strips of abrasive cloth. In operation, the brush bristles force the abrasive tips into depressions and also allow them to ride over projections of the work-piece surfaces. Made in 4" and 2" widths, the 4" width (for 4" abrasive) weighs less than 6 pounds when fully loaded. The central cylinder of the Head has 4 anchor pins for securing 4 abrasive assemblies—4 strands per assembly—making up the 16 strand loading. Each of the 16 strands of abrasive is about 18" long, accounting for storage of approximately 24 lineal feet of coated abrasive. Complete information about the portable Head may be obtained by writing to The Vonnegut Moulder Corporation, Dept W., 1819 Madison Avenue, Indianapolis 25, Indiana. Ask for Bulletin No. Sixty-Three.



Dowel Chucking Unit

The new Hawker Model T-50 fully automatic dowel chucking machine (patents pending) is the latest addition to the company's line of precision machine tools. The machine is completely automatic. A variable

speed motor gives feed speeds up to 1500 dowels per hour. A separate, constant speed 3600 rpm motor drives the tool head, which can be changed to perform drilling, tenoning, tapering, threading, topping, etc. The chucking machine is caster mounted with screw dogs to hold it in position to receive dowels from the rod and dowel machine. Write to Hawker Mfg. Co., Dept. W., 1425 Keowee St., Dayton 4, Ohio for more information.

Glue Block Machine

This "Glue Block Machine" is a semi-automatic cam controlled mechanism. A preselected chute board for cutting 45°–90°–45° to 10°–90°–80° blocks is mounted on the base directly below the feed roll which feeds the stock through the bandsaw intermittently allowing time for a circle saw to cut the blocks to length at two and five-eights inches (2⅝ in.); this length is predetermined at the time of manufacture and may be of any desired length. It can be detached easily from the saw. It is capable of 240 glue blocks per minute, other capacities vary according to size.—Patent pending. For further details, write John Widdicomb Company, Dept. W., Grand Rapids, Michigan.

"Swing Stacker"

Thew Shovel Co. has developed a hydraulically operated fork lift attachment which fits the boom of a Lorain SP-414 self-propelled carrier. The 7-ft. long forks have a vertical lift of 9 ft. 8 in., can rotate 180°. With boom raised and forks elevated, total height is 27 ft. The turntable and fork lift front end can make a full 360° swivel. Travels at 7 mph loaded. Lifting capacity 5000 lbs. More information available from manufacturer c/o Dept. W., Lorain, Ohio.

Cover Lens

A new plastic cover lens said to reduce fogging which is more durable than regular glass and plastic cover lenses is announced by American Optical Company, Safety Products Sales Division, Dept. W, Southbridge, Mass. The new plastic lens are claimed to remain pitfree longer than glass and resist fusion of hot metals and spatter.

Block & Sheave Catalog

A new 24 page catalog describing the complete line of blocks and sheaves has been announced by American Hoist & Derrick Co. Information includes block number, capacity in tons, number of Sheaves rope size and weight of each block. A section on "How to figure line parts", with illustrations, ratio table and formula will make reeving and line part figuring easy. Copies of the new catalog No. 300-24 are available now. For free copies write to American Hoist & Derrick Company, Dept. W., St. Paul 1, Minnesota.

DID YOU KNOW

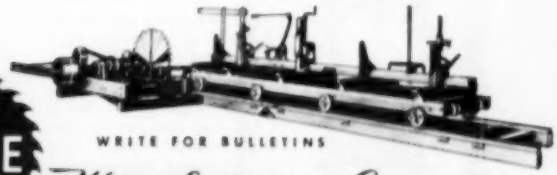
Before the circular saw was invented, the "sash saw" type of mill was in use. You could rest or read for 15 minutes before the slow moving saw cut through a log!

and did you know . . . .

It's a far cry from sash saw mills with their limit of 500 board feet per day to LANE Tractor Saw Mills that have a capacity up to 12,000 feet per day.

Fast and economical in operation, they are the popular choice of operators and sawyers who want a mill that "stands the gaff" and yet does not have excessive weight.

"You Gain with Lane"



LANE

WRITE FOR BULLETINS

Manufacturing Company

MONTPELIER, VERMONT

Importers of

GENUINE MAHOGANY

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BAND SAWN
PONDEROSA & SUGAR PINE
SOFT TEXTURED
BIG MILL HIGH ALTITUDE STOCK

CALIFORNIA REDWOOD
BAND SAWN HUMBOLDT BAY

We Maintain a West Coast Buying Office

DON B. WALLACE INC.
Guardian Building
Detroit, Michigan

Convert . . .

COSTLY WASTE TO PROFITABLE USE

with a DIAMOND HOG

UP TO 40% FINER REDUCTION... MINIMUM BY-PASS

FOR:
SAW MILLS
BOX MILLS
PULP MILLS
STAVE MILLS
PAPER MILLS
HEADING MILLS
CONVERTERS
TURPENTINE
WOOD PLANTS

DIAMOND HOGS are used the world over by lumber and paper mills and woodworking industries for fast, economical reduction of slabs, edgings, scrap pieces and other non-metallic materials, green or seasoned, into chips for fuel or commercial use.

SAVE as much as 50% horsepower due to staggered knives that give a clean shear cut the full width of anvil—eliminating strain and overloading.

WRITE for Bulletin H-50—It Will Show You How To Make Waste Pay.

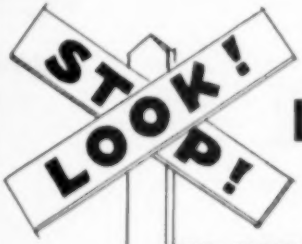
6 Sizes—Capacities 4 to 36 Tons Per Hour
Plain or Roller Bearing

DIAMOND IRON WORKS, INC.
AND THE MAHR MANUFACTURING CO. DIV.
1722 N. 2nd STREET, MINNEAPOLIS 11, MINN.

Tannewitz
HIGH SPEED
BAND SAWS

Saws faster, smoother and easier than conventional band saws. Regularly increase production from 50% to 100% with consequent reduction of costs. Built by sawing machinery specialists. Write for circular.

THE TANNEWITZ WORKS
GRAND RAPIDS 4, MICHIGAN



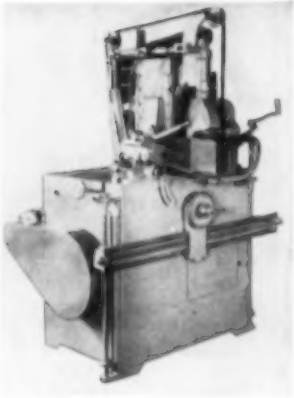
and
LISTEN!

TO MANUFACTURERS
PRAISE the quality of

USE OUR MIXED CAR SERVICE

W. T. SMITH'S
PINE—OAK—GUM—HICKORY
and other HARDWOODS

W. T. SMITH LUMBER CO.
CHAPMAN, ALABAMA
67 YEARS OF MANUFACTURING YELLOW PINE AND HARDWOODS



Saw Sharpener

Hanchett Model 772 Circular Saw Sharpener now employs air power in the shift mechanism of its grinding head. Elimination of more than 25 parts through this advancement in design has resulted in smoother operation and reduction of wear on moving parts according to the manufacturer. Precision-built for saws 20" to 72" in diameter, the Hanchett 772 is available for larger saws on special order. It is used for rip, crosscut, slasher, and inserted tooth saws with teeth spaced from ⅝" to 3", and is designed in every detail for heavy duty service in sawmills, pulp and paper mills, as well as in veneer, plywood, and woodworking mills of every kind.

Descriptive bulletin will be furnished by the manufacturer upon request. C/o Dept. W., Hanchett Mfg. Co., Big Rapids, Mich.

Sanding Turnings

Behr-Manning double-faced garnet finishing paper is said to simplify the sanding of reeded and fluted posts. Designed for use on a verticle spindle sander, this method is also adaptable to horizontal spindle operations. Double-faced, (coated both sides), cut sheets 4" x 10" with 15/16" arbor holes, arranged in a staggered fashion to form a loose buff 25 to 100 sheets in thickness, provides an ideal tool for the final finishing of deep grooves and creases. Available in grits ranging from 80-0 (Medium-Coarse) to 240–7/0 (Fine), depending on the finish required. Write Behr-Manning, Dept. W., Troy N. Y. for more details.

Router Bulletin

A bulletin is available on the new Onsrud Medium Duty Router, Model W-180, which includes features, specifications and accessories information from the Onsrud Machine Works, Inc., 3938 Palmer Street, Chicago 47, Illinois. Specify Bulletin 1135. This addition to the Onsrud line, is available with a single spindle speed, 20,000 rpm or a double speed model, 10,000 and 20,000 rpm. All sizes of router bits and small-diameter shaping cutters may be used with both models. This use of small-diameter bits and cutters at proper spindle speeds permits an almost limitless variety of intricate routing cuts, and finished work that is an exact duplicate of the pattern. Spindle Head Assembly is *removable*, and *replaceable as a unit*. Thus time-loss for spindle-repair is now avoidable with a "spare" unit on hand.

Your glue problems—if you'll make them ours—are never too small, too large, or too tough for National Casein's trouble-shooting "Casie" and "Resie."

These busy little characters represent nearly 35 years of solving glue problems of every kind—both casein and resin—for practically every gluing project.

NCC has glues for all types of woodworking. Sash and door, joint work, millwork, corestock, doweling, bending, plywood, dimension stock, etc.

Outline in a letter any glue problem you may have, and we'll submit a solution without cost or obligation to purchase—FREE!

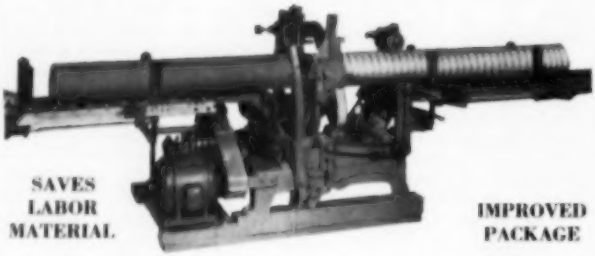
On-time delivery in tank cars, tank trucks or drums is yours from NCC.

National Casein

No Glue Problem—Casein or Resin—is too Little, too Big, or too Tough!

605-19 West 80th Street, Chicago 20, Illinois • Broad & Fulton Sts., Riverton, N. J.

PIERCE MODEL D-S WRAPPING MACHINE



SAVES LABOR MATERIAL

IMPROVED PACKAGE

The Model D-S spiral wrapping machine is a production machine that wraps packaged window frames, bundles of slats or molding in 5 to 8 seconds. Each layer of paper is automatically glued to the preceding layer. The tight binding prevents any internal movement of individual boards during shipment—the usual cause of package breakage. Available on sale or lease basis.

Write for specifications. *Send us your wrapping problem.*

PIERCE WRAPPING MACHINE COMPANY

Builders of production wrapping machinery since 1910

625 W. Jackson Blvd., -:- Chicago 6, Ill.

BADGER

Ground Corrugated-Back Knives

"Service Proved" by Years of Heavy Duty Performance

Satisfied users continue to specify BADGER Corrugated-Back Knives for these Service-Proved features:

- **SHARP, CLEAN CORRUGATIONS** . . . ground by a special process . . . assure an extra margin of safety and security.
- **FINEST HIGH SPEED STEEL** . . . scientifically heat treated and tempered . . . to insure uniform hardness and edge-retention toughness.
- **DIMENSIONAL UNIFORMITY** . . . through precision grinding methods . . . cuts jointing costs, assures even wear, prolongs service life.

Available in 24" Bars, or Cut to Specified Lengths

CUTTER HEADS BADGER KNIVES

Engineers to the Woodworking Industry

WISCONSIN KNIFE WORKS

BELOIT, WISCONSIN

KILN DRIED LUMBER

FOR

immediate shipment

EITHER TRUCKLOAD OR CARLOAD LOTS

Northern Hardwoods

Basswood	4/4 to 6/4
Birch	4/4, 5/4
Hard Maple	4/4 to 12/4
Soft Elm	4/4 to 10/4

Appalachian Hardwoods

Hard Maple	4/4
Red Oak	5/8 to 8/4
White Oak	5/8 to 8/4

Southern Hardwoods

Ash	4/4 to 12/4
Cottonwood	4/4
Sap Gum	4/4 to 8/4
Tupelo Gum	4/4 to 6/4
Red Gum	4/4
Soft Maple	4/4 to 8/4
Sycamore	5/8, 4/4
Pecan	4/4, 5/4
Poplar	4/4 to 8/4

Mahogany

Honduras	4/4 to 12/4
Central American	4/4
Korina	4/4

Walnut

Steamed	5/8 to 8/4

Pine

Parana	4/4

The above hardwoods are in No. 1 Com. & Better Grades

and generally are available in higher grades.

Your inquiry will receive prompt and courteous attention

MONARCH HARDWOOD LUMBER CO.

3304 W. Belmont Ave.

Chicago, Ill. Tel. JUniper 8-1234

Hardboard Press

Operation of the new hardboard plant of the Long-Bell Lumber Co., at Longview, Wash., is steadily progressing to the production point. Recently installed was the press pictured above which will be used in the manufacture of hardboard by the "dry process." The 10 opening press, manufactured by Watson-Stillman Company of New Jersey, weighs 160,000 pounds and will exert 750 pounds of pressure per square inch.

New Twist Drill

Called "Screw-Mate" because it matches the body shape of the corresponding size wood screw, the new 3-in-1 drill will countersink, drill shank clearance, and drill tapered pilot hole all in one operation. With a Screw-Mate Drill it is impossible to drill pilot holes too large or too small. The shoulder on the tool stops the drill at the proper depth. Screw-Mates fit any drill gun, hand drill, or drill press and are available in a wide variety of sizes. For Screw-Mate sizes, literature, and prices, address: D. R. Carner Co., Inc., Dept. W., 106 Hospital St., Providence, R. I.

Buffing Wheel

The patented Airflow "Pressure Cooled" buffing wheel is said to be ready for use as supplied. This engineered buff is available in various constructions for specific applications. It is stated that the wheel will polish any contour without difficulty. One buff rough polishes, fine polishes and finishes. This buff can be used on all woods, as well as all plastics and metals. Manufactured exclusively by United Buff Products Corp. 243 Oak St., Passiac, New Jersey.

Only the Best that Northern Hardwoods Offer

Rotary, Sliced, & Half-Round

VENEERS

In The Following Species:

Birch – Maple – Bass – Ash
Oak – Elm – White Pine

PENOKEE VENEER COMPANY

TELETYPE, MELLEN, WIS. 29 TELEPHONES 205-3313
P. O. BOX 220
MELLEN, WISCONSIN

FAMOWOOD ... *the AMAZING* ...

ALL-PURPOSE PLASTIC for wood finishes!

Applies like putty . . . Sticks like glue!

FAMOWOOD is the answer...where wood finishes are important. Simple to use...efficient, lasting, time-saving, when filling wood cracks, gouges, nail and screw holes or correcting defects. Dries quickly, does not shrink. *Stays put* under adverse conditions. FAMOWOOD sands easily, does not gum up sander. *Takes spirit dye stains freely.* Waterproof and weatherproof when properly applied. Ready to use—*"right out of the can."* Fifteen matching wood colors ...with amazing matchless wood finishes.

USED BY FURNITURE MFGS • SASH AND DOOR MFGS
CABINET MAKERS • CONTRACTORS • BOAT BUILDERS • PAINTERS
AIRCRAFT PLANTS • PATTERN SHOPS • HOME BUILDERS • ALL WOOD PRODUCTS

FAMOWOOD descriptive literature & price list on request. Distributor & Dealer inquiries invited, write Dept. WWP

BEVERLY MANUFACTURING COMPANY 9118 SOUTH MAIN STREET LOS ANGELES 3, CALIF.

Manufacturers of... FAMOWOOD • FAMOGLAZE • FAMOSOLVENT

Names... Events

Deaths

Ralph Cunningham, Vice President and Director of the General Box Co., and manager of the Detroit Division.

Stewart Smythe, Sr., President of the Stewart Smythe Mahogany Co., Philadelphia, Pa., and present Director and past President of the Mahogany Association.

Dr. Harry P. Brown, eminent wood technologist, member of faculty of State University of New York, College of Forestry, Syracuse, N. Y.

George Edward French, founder and Chairman of the Board of the Atlantic Lumber Co., Boston Massachusetts.

Retirements

Dr. Edwin A. Ziegler, Dr. Warren D. Brush and Dr. H. S. Newins announce their retirement from the staff of the School of Forestry, University of Florida, Gainsville, Fla., effective July 1st.

Warren T. Green Vice President and Director of the Mengel Co. has retired at the age of 65.

John D. Mylrea has retired as Director of the Forest Products Division of the Office of Price Stabilization because of ill health.

Promotions

Earl B. Birmingham elected President and George B. McLeod as Chairman of the Board of Directors of the Hammond Lumber Co., San Francisco, Cal.

Louis J. Francino succeeds the late J. Roger White as Vice President in charge of sales and advertising of the Formica Co., Cincinnati, Ohio.

Peter S. Watsek, President of Crossett Companies, Crossett, Ark., has been named Arkansas' Junior Chamber of Commerce Man of the Year.

Dean B. Thatcher has been promoted to director of industrial engineering for Masonite, Corporation, with his offices in Chicago.

Lachlen Mackenzie has been appointed Vice President in charge of all M and M Woodworking Company's manufacturing operations, in California, Oregon and Washington it was announced by Thomas B. Malarkey, President of the Company.

Noel E. Keeler is named Vice President and Treasurer of M and M Woodworking Co.

John R. Wanamaker, great grandson of the late John Wanamaker, is elected to the Board of Directors of Henry Disston & Sons, Inc., Philadelphia, Pa.

Dr. Edward G. Locke, Chief of the Forest Utilization Service in the Pacific Northwest Forest and Range Experiment Station, is transferred from Portland to the U. S. Forest Products Laboratory in Madison, Wis.

Alan Irwin has been promoted to Manager of the Detroit Division of the General Box Co., it is announced by N. W. Embry, President of the Company.

Elmer A. Skonberg is elected President of the Lehwood Corporation of South Bend, Ind. Other officers elected are: Edgar A. Leham, Vice President, and J. A. Schmidt, Jr., Secretary and Treasurer.

Howard Berry has joined R. S. Aries & Associates, New York consulting engineers and economists as Senior Associate.

Newest Methods make

PermaWood
HARDWOOD PLYWOOD

The combination of latest machinery, skilled workmen, and our own streamlined methods enable us to produce a better product for your purpose. It has met the test for thirty-two years, and we're proud to offer it as PERMAWOOD Hardwood Plywood.

This modern, high-speed lathe cuts veneer up to 100-inches long; has a capacity of 12,000 feet of timber in eight hours.

We make PERMAWOOD panels in standard sizes, in all veneer construction from 3/20" to 1-1/16" thick, and in lumber core construction in 3/4" and 13/16" thickness. Widths manufactured are from 30" to 48"; and lengths from 36" to 96".

Write for latest stock lists and prices.

DARLINGTON VENEER CO., INC.

Established and in continuous operation since 1918

Darlington, South Carolina

Do You Need . . .

Kiln-dried Cores . . . top quality . . . any species . . . Made to your exact specifications.

OR . . .

7/16" Oak Drawer Sides and Backs . . . ready to assemble . . . finest workmanship.

Wire Us Today . . . insure your present and future needs on these and others with

L. N. BAGNAL

P. O. Box 2896 Tel. 8115
Winston-Salem 1, N. C.

CHARLES M. BOARDMAN has been named field representative by the Western Pine Association in the agricultural states of Iowa, Minnesota, northern Missouri and eastern portions of Nebraska, South Dakota and North Dakota.

RICHARD W. PETTERSEN is named field representative for the northwest including Idaho, Montana, Wyoming, Colorado and Utah, by the Douglas Fir Plywood Association of Tacoma, Wash.

ROBERT H. CLARKE, JR., and CHARLES W. NIEDERAUER have been appointed Vice Presidents of the Borden Company's Chemical Division.

HAROLD L. MITCHELL has been appointed Director of the Southern Forest Experiment Station at New Orleans, it was announced by Lyle F. Watts, Chief, Forest Service, U. S. Department of Agriculture.

PAUL L. SHARPE has been appointed sales representative of V. J. Dolan & Co., Inc., Chicago, Ill. He will cover the North Carolina and Virginia territory.

Associations

The 54th Annual Convention of the NATIONAL HARDWOOD LUMBER

GENNETT
LUMBER COMPANY
82 Page Ave. Tel. 3-3626
Asheville, N. C.

Manufacturers of Soft-Textured Appalachain Hardwoods

•

Mountain Red Oak
Chestnut
Soft Poplar
Chestnut Oak
Basswood
White Pine for Paneling and Box Stock

MILLS

Ellijay, Ga. Manchester, Ky.
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Association will be held at the Sherman Hotel in Chicago, Ill., September 25th to 27th.

South Central Lumberman's Club was formed at a June 11th meeting at the Cordell Hull Hotel, Dyersburg, Tenn. Its purpose is to meet monthly to discuss items of mutual interest to the twenty hardwood lumber manufacturers in the West Tennessee, West Kentucky and Missouri areas.

Ray C. DuBrucq, of the Crescent Machine Division of Rockwell Manufacturing Co., Leetonia, Ohio, was re-elected President of the Association of Manufacturers of Woodworking Machinery at the organization's 51st Annual Meeting in Philadelphia, Pa. recently.

Miscellaneous

Jack L. Hoskins, Fayetteville, J. M. Bullock, Eureka Springs, and C. W. Scarsdale, Harrison, Tennessee, have filed articles of incorporation for the White River Lumber Products Co., Fayetteville.

Synvar Corporation has started operations in its southern plant located in Greensboro, N. C., operating under the name of Synvar Southern Corporation. Its line will include urea-formaldehyde, phenol-formaldehyde and resorcinol-formaldehyde type resins.

W. F. Rockwell, Jr., President of Rockwell Mfg. Co. Pittsburgh, Pa., announced the acquisition of the Ohlen-Biship Mfg. Co. of Columbus Ohio. The company manufacturers a complete line of mill and factory woodworking saws.

Weyerhaeuser Timber Company's new Coos Bay sawmill began operations in North Bend, Ore., May 1. Their 205,000-acre Millicoma tree farm supplies the logs for the operation.

A Wood Preservation Laboratory has been established within the brochemical research department of the Dow Chemical Co. under the direction of Fred J. Meyer, assisted by Ralph M. Gooch.

Ashepoo River Lumber Co., Ashepoo, S. C. suffered a complete loss by fire of their new double band mill May 29. H. A. Hanlon, President declares replacement cost would be $200,000.

American Box Co. Cleveland, Ohio, and its subsidiary The American Wood Products Corp., Marion, S. C., is celebrating its 50th anniversary with new advances in safety and economy box engineering.

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NAMES and EVENTS

(Continued from Page 78)

LYLE WATTS, Chief Forester of the U. S. Forest Service, is directing the distribution of 100,000 four-color forest fire prevention posters to be placed in and around park, forest and timber areas throughout the country.

THE BORDEN COMPANY'S Chemical Division announces plans to construct a formaldehyde and liquid urea resin manufacturing plant in the outskirts of Demopolis, Ala., as revealed by William F. Leicester, President of the Company's Chemical Division.

NATIONAL CONTAINER CORPORATION have received clearance from the Defense Production Board for construction of a $25,000,000 pulp and paper plant at Clydesdale, Ga.

HUDSON PULP & PAPER CO., Palatka, Fla., has acquired 233,000 acres of cut-over pine land located in Dixie County, Fla. Mark L. Fleishel is a principal executive of the previous owners and the succeeding company.

R. S. Wertheimer, manager of the Longview Fiber Co., Longview, Wash., announced plans for the construction of a plant to produce wood chips in the Eugene, Oregon area.

THE HARBOR BOX & LUMBER CO., Los Angeles, Cal., announces the acquisition of the Rouch Sawmill, Ltd., Springville, Cal.

E. W. JACPSON CO., INC., has organized a manufacturing plant for tool handles in Louisville, Ga.

MIDSTATE MANUFACTURING CO., has been formed at Princeville, Ore., according to J. F. Daggett, President. The company will produce cut stock for interior trim, boxes, and other items.

POSEY LUMBER CO., Vancouver, Wash., was destroyed by fire May 5 with a loss of $40,000.

THIRTY-EIGHT HUGE OAK TREES from the state forest near Ash Cave, Ind., were sold for the highest price in the history of state forest operations. The price figured nearly $375 per thousand board feet.

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ADVERTISER'S INDEX

Adhesive Products Corp. 77
American Saw Mill Machinery Co. 57
Anderson-Tully Co. 48
Associated Plywood Mills, Inc. 41
Atkins & Co., E. C. 15
Atlantic Lumber Co., The 39
Auto Nailer Co., The 11

Bagnall, L. H. 77
Bartholsen Engineering Works, Inc., V. 69
Beverly Manufacturing Co. 75
Borden Co., The Chemical Div. 19
Bradley Lumber Co. 6
Bruce Co., E. L. 30
Buss Machine Works 50

Carborundum Co., Coated Products Div. 7
Cee Manufacturing Co., The 64
Coffing Hoist Company 3

Darlington Veneer Co., Inc. 76
Diamond Iron Works, Inc. 72
Diehl Machine Works, Inc., G. M. 34
Dimension Stock 81
Disston & Sons, Inc., Henry 48

Edmont Manufacturing Co. 68
Ekstrom, Carlson & Co. 3

Fitchburg Engineering Corp. 49
Foley Mfg. Co. 77
Food Machinery & Chemical Corp. 59
Fordyce Lumber Company 46
Foreign & Domestic Veneers, Inc. 79
Foxboro Company, The 18
Franklin & Son, Isaac 61

Gamble Brothers, Inc. 16
Gennett Lumber Co. 77
Girdler Corporation, The 17
Glidden Company, The 4
Greenlee Brothers & Co. 67
Greenlee Tool Co. 65

Hartzell Propeller Fan Co. 84
Hermance Machine Co. 61
Hother Bros. Saw Mfg. Co., Inc. 63

Jamestown Veneer & Plywood Corp. 55
Jones & Orth Cutter Head Co. 44

Kiln Institute 79

Lane Manufacturing Co. 71
Laucks Laboratories, Inc. 8
Lovsted & Co., Inc., C. M. 62

Mansfield Hardwood Lumber Co. 58
Mattison Machine Works 35
McCulloch Lumber Co. 78
Memphis Hardwood Flooring Co. 78
Moreen-Johnson Machine Co. 42-43
Meyers Co., Inc., W. F. 64
Midwest Walnut Co. 79
Mitts & Merrill 63
Monarch Hardwood Lbr. Co. 74
Monite Waterproof Glue Co. 70
Monsanto Chemical Co., Plastics Div. 13
Moore Dry Kiln Co. 57
Morgan Manufacturing Co. 61

National Casein Co. 73
National Lock Company 14
Nickey Brothers, Inc. 68
Northern Hardwoods 79

Oliver Machinery Co. 56

Panakoo Veneer Company 75
Perkins Glue Co. 83
Pierce Wrapping Machine Co. 74
Plaskon Div., Libby-Owens-Ford Glass Co. 10
Port Barre Lumber Industries, Inc. 66

Radio Receptor Co., Inc., Thermatron Div. 12
Reichhold Chemicals, Inc. 20
Rohm & Haas Co. 38

Shimer & Sons, Inc., Samuel J. 62
Smith Lumber Co., The Ralph L. 56
Smith Lumber Co., W. T. 72
Standard Dry Kiln Co. 47
Standard Electric Mfg. Co., Inc. 66
Stanley Works, The 60
Stetson-Ross Machine Co. 36
Stewart Lumber Co., E. A. 40

Tannewitz Works, The 72
Timber Engineering Co. 78
Twin-Fast 22

Universal Door Carrier, Inc. 48

Virgeson Lumber Co., Joe 78

Wallace, Inc., Don B. 72
Wheland Co., The 45
Whitney & Sons, Inc., Baxter D. 2
Wisconsin Knife Works 74
Wood Turnings 80

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Increases Production...
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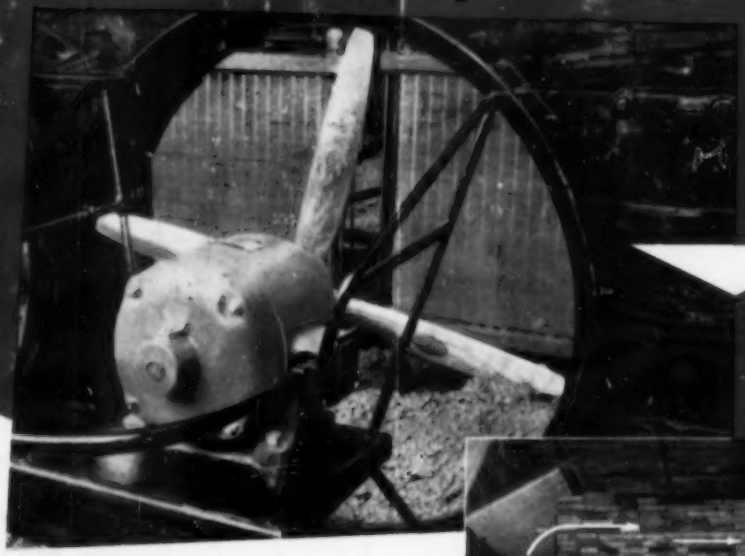

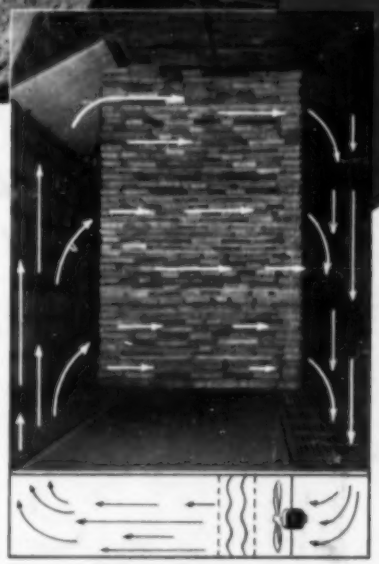

Often, instead of building a new kiln to replace one which has proved to be inefficient, you can save time, money and trouble by modernizing the old kiln with Hartzell air heating and air moving equipment.

It's no great trick for Hartzell equipment to give you the heat you need, distribute it properly and dispel moisture efficiently.

The efficient Hartzell tandem (fan and heat transfer unit), shown above in an actual installation, does wonders in *any* kiln, new or old. At the right is a car of lumber being dried, with the position of the heating and circulating elements sketched. Other types of kilns can be handled as simply. And note this: If you have trouble with case-hardening at one spot and incomplete drying at another, write for information on the new Hartzell *reversible* dry-kiln fan. It can save time and money for you.

Hartzell kiln-drying experience is yours for the asking. Write —or mail the coupon below.

CLIP AND MAIL THIS COUPON NOW FOR INFORMATION

HARTZELL **PROPELLER FAN CO.**
Div. of Castle Hills Corp.
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PROPELLER-TYPE FANS AND BLOWERS—ROOF VENTILATORS—UNIT HEATERS • ENGINEERING OFFICES IN PRINCIPAL CITIES